Focus session

A3: The use of data in mobility management

16.00–17.30

TRAFICOM Finnish Transport and Communications Agency

eParking.fi

SITOWISE The Smart City Company

Regional Council of Southwest Finland

Our school is walking and cycling - promoting active mobility in schools

ECOMM 31.5.2022

Anna Huttunen, Project Manager, City of Lahti
Matti Pesu, Making Sense

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Our school is walking and cycling 2021

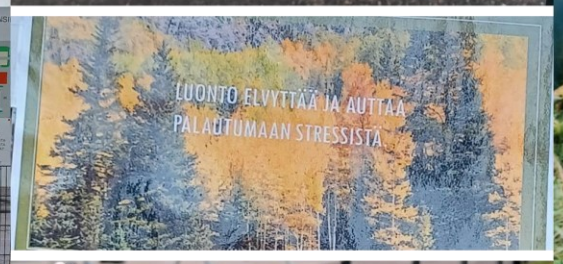
- 1.2. –31.12.2021
- The aim: to collect and analyze data and promote active mobility in schools.
- Funded by Traficom
- 11 classes from 5 schools
- Partners: LUT University, PALO Adventures, FRSC, Making Sense

Implementation

- Classes:
  - Traffic safety, climate and transport, health benefits of active mobility
- Cycling skills test and bike repair
- Bike packing tour
- Mapping of traffic conditions
- Cycling potential and assessment of current conditions –> data for further planning


Kaisla

Länsiharjun koulu



Cycling potential – data in mobility management

Cycling to school is very benecial:
for the child, for the city, and for the society.

Cities want more pupils to cycle to school.

Efficient and light analysis can be used to produce a wide data that helps find the most efficient tasks to eliminate problems that prevent cycling to become more popular.

Matti Pesu / Making Sense worked with Lahti in Meidän koulu kävelee ja polkee–project.

Measure!

The city wide school cycling situational picture in Lahti consists of:

1. Cycling potential for individual schools and for the city
2. Cycling routes to every school and rout conditions
3. Winter maintenance level of the main routes.
4. Bicycle parking conditions, quality and capacity

Additionally, the awareness could be further enhanced with:

- Bike counts ie. school cycling traffic quantities
- Questionnairing the pupils and parents on why they do not cycle to school

The school cycling potential

Total amount of pupils

Amount of pupils in distance zones

State of the traffic environment

The school cycling potential

Schools

	Koulumatkojen pituudet ja oppilasmäärät					Liikenneympäristö	Pyöräilypotentiaali
	Oppilaita kaikkiaan	<3 km		<5 km			
		lkm	%	lkm	%		
Ahtiala	730	623	85%	673	92%	Esikaupunki, Haastava	suuri
Ali-Juhakkala	23	11	48%	14	61%	Esikaupunki, Vilkas	pieni
Ersta	211	159	75%	195	92%	Esikaupunki, Rauhallinen	suuri
Harju	226	198	88%	213	94%	Keskusta, Vilkas	keskisuuri
Jalkaranta	291	272	93%	283	97%	Esikaupunki, Haastava	keskisuuri
Karisto	417	402	96%	415	100%	Esikaupunki, erittäin rauhallinen	suuri
Kasakkamäki	272	263	97%	265	97%	Esikaupunki, Vilkas	suuri
Kirkonkylä	218	164	75%	179	82%	Esikaupunki, Vilkas	keskisuuri
Kivimaa	759	580	76%	744	98%	Keskusta, Haastava	suuri
Kukkanen	395	160	41%	268	68%	Esikaupunki, Vilkas	pieni
Kunnas (nyk. Alasenjärven kou	238	235	99%	236	99%	Esikaupunki, Haastava	suuri
Kärpänen	514	467	91%	497	97%	Esikaupunki, Haastava	suuri
Lahden Ruotsinkielinen koulu	93	49	53%	61	66%	*Esikaupunki*, Rauhallinen	pieni
Lotila	434	307	71%	371	85%	Keskusta, Haastava	keskisuuri
Lähde	1017	850	84%	996	98%	Esikaupunki, Vilkas	suuri
Länsiharju	545	470	86%	537	99%	*Esikaupunki*, Haastava	suuri
Mukkula	771	639	83%	702	91%	Esikaupunki, Vilkas	suuri
Möysä	379	375	99%	379	100%	Keskusta, Haastava	suuri
Rakokivi	336	270	80%	320	95%	Esikaupunki, Vilkas	suuri
Renkomäki	357	338	95%	348	97%	Esikaupunki, Vilkas	suuri
Salpausselkä	565	261	46%	420	74%	Keskusta, Haastava	pieni
Tiirismaa	609	283	46%	435	71%	Keskusta, Haastava	pieni
Villähde	210	172	82%	186	89%	Esikaupunki, Vilkas	keskisuuri
Yhteensä	**9874**	**7781**	**79%**	**8995**	**91%**		

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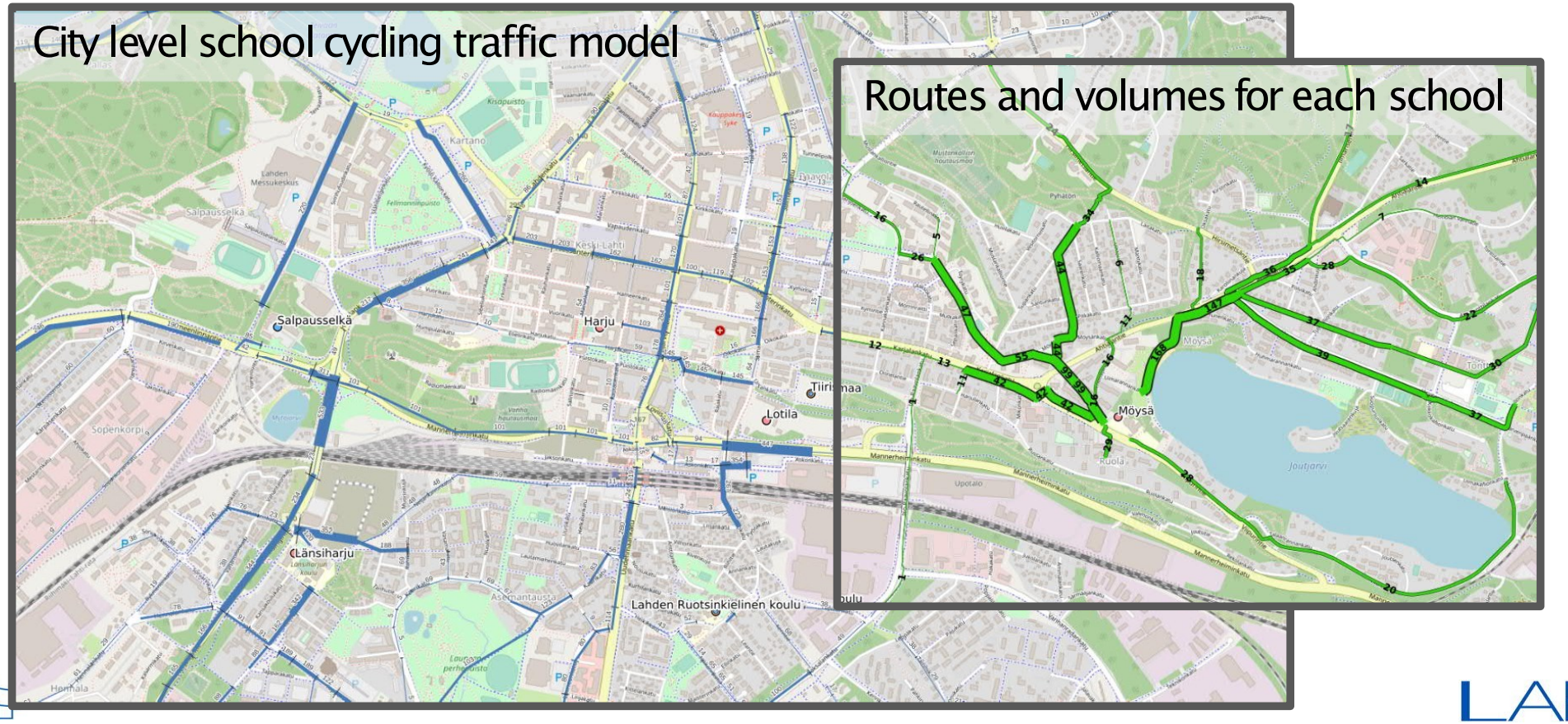
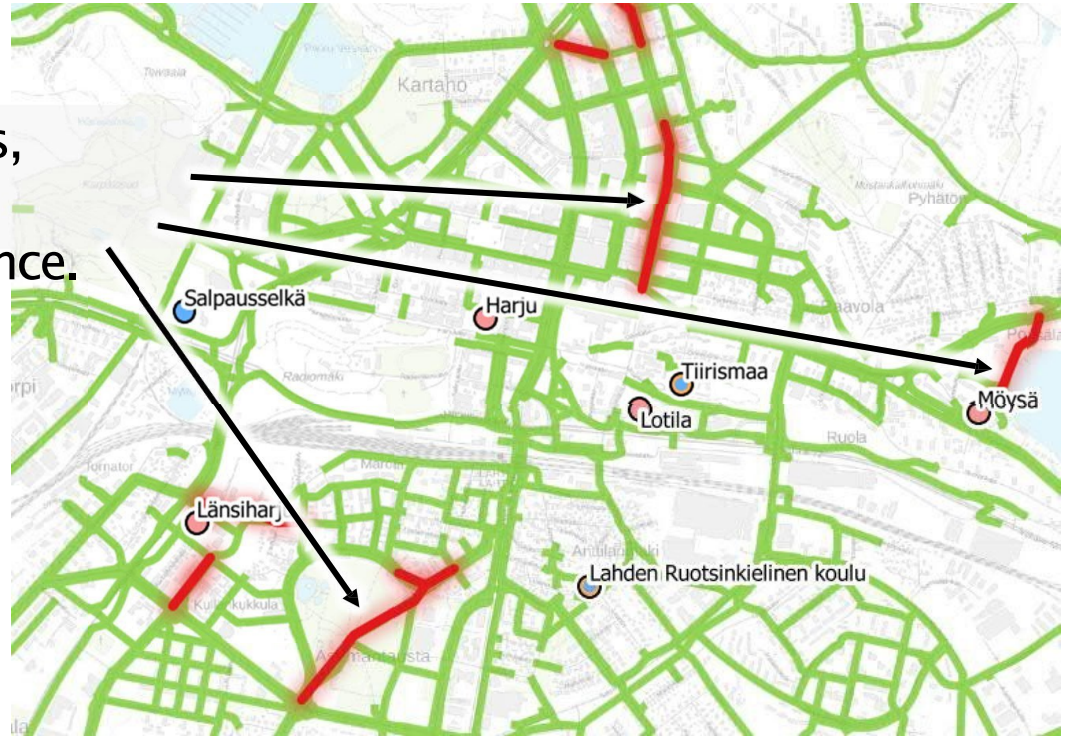
School cycling routes



Winter maintenance level vs. route volume

Busy routes, low maintenance.



Assessment of bike parking conditions in schools

			Amount of pupils in the school and bike park capacity requirements								Points given based on observations on site									
Name of the school: a=alakoulu, y=yläkoulu, e=erityiskoulu	**Summary**	**Cycling potential of the school**	**Amount of pupils**	**Living less than 5 km away**	**Capacity requirement in current situation**	**Capacity requirement in future goal**	**Amount of bike spots in racks (gross)**	**Amount of bike spots in racks (net)**	***Amount of bike rack for personnel***	**Bike rack type(s)**	**Capacity**: Kasvun varaa 2, riittävä 1, riittämätön -1	**Rack:** Runkolukittava 3, ei-runkolukittava 1, ei telinettä 0	**Shelter:** Katos 2, ei katosta 0	**Location:** Hyvä saavutettavuus kulkureitiltä 2, hieman sivussa kulkureitiltä 1, kaukana kulkureitiltä 0	**Route**: selkeä ja toimiva reitti parkille 1, ei selkeää reittiä 0	**Lighting:** Valaistus 1, ei valaistusta 0	**Guidance and signs:** On tai ei tarvetta 1, ei 0	**Security**: Kameravalvonta 1, ei valvontaa 0.	**Sum of points:** min. -1, maks. 13)	**Grade (4-10)**
Ahtiala (a, y)	Suuren pyöräilynpotentiaalin yhtenäiskoulu jolle myös pyöräillään paljon. Pyöräparkin	suuri	730	673	135	303	262	262	ei havaittu	Maastonostettu eturengast	1	1	0	1	1	1	1	0	6	**7**
Ali-Juhakkala (e)	Ei pyöräparkkia. Vähäinen oppilasmäärä. Erityiskoulun koulumatkapyöräily ei ehkä	pieni	23	14	6	9	0	0	0	Ei pyörätelineitä	-1	0	0	0	0	0	0	0	-1	**4**
Ersta (a)	Suuren pyöräilypotentiaalin koulu. Eturengastelineet luontevasti koulun seinustalla hyvin	suuri	211	195	88	127	195	97.5	7.5	Perinteinen eturengast	1	1	0	2	1	1	1	1	8	**8**
...																				
Rakokivi																				
Nastopoli							146	73	18	Perinteinen eturengastseline	-1	1	0	1	1	1	1	0	4	**6**
Loisto (a)	Suuren pyöräilypotentiaalin koulu, jolla uusi ja erittäin laadukas pyöräpysäköinti uuden koulurakennuksen ympärillä	suuri	336	320	64	144	128	256	ei havaittu	Tilava runkolukittava kaari	2	3	2	1	1	1	1	0	11	**9**
Renkomäki (a)	Suuren pyöräilypotentiaalin koulu, jolla riittävä pyöräpysäköinti. Ei runkolukitsemismahdollisuutta.	suuri	357	348	70	157	300	150	ei havaittu	Perinteinen eturengast	1	1	0	2	1	1	1	1	8	**8**
Salpausselkä (y)	Laadukas pyöräparkki, paljon runkolukitusta ja runsaasti kapasiteettia. Osa telineistä on	pieni	565	420	189	273	336	336	ei havaittu	Runkolukittava katiullinen	2	3	0	2	1	1	1	1	11	**9**
Tiirismaa (a, y)	Väistötilojen riittävät pyöräparkit joista toinen alkeellinen ja toisessa	pieni	609	435	196	283	228	194	ei havaittu	Eturengastseline.	1	3	0	2	1	1	1	0	9	**8**
Villähde (a)	Kapasiteetiltaan hyvin riittävä pyöräparkki. Ei	keskisuuri	210	186	84	121	200	200	ei havaittu	Maastonostettu	2	1	0	2	1	1	1	0	8	**8**

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Enhance!

The data makes wise prioritization possible.

1. Assign sufficient winter maintenance on the busiest routes
2. Build enough quality bike parking facilities starting from high cycling potential schools
3. Take notice of school cycling streams in city planning

Closing remarks

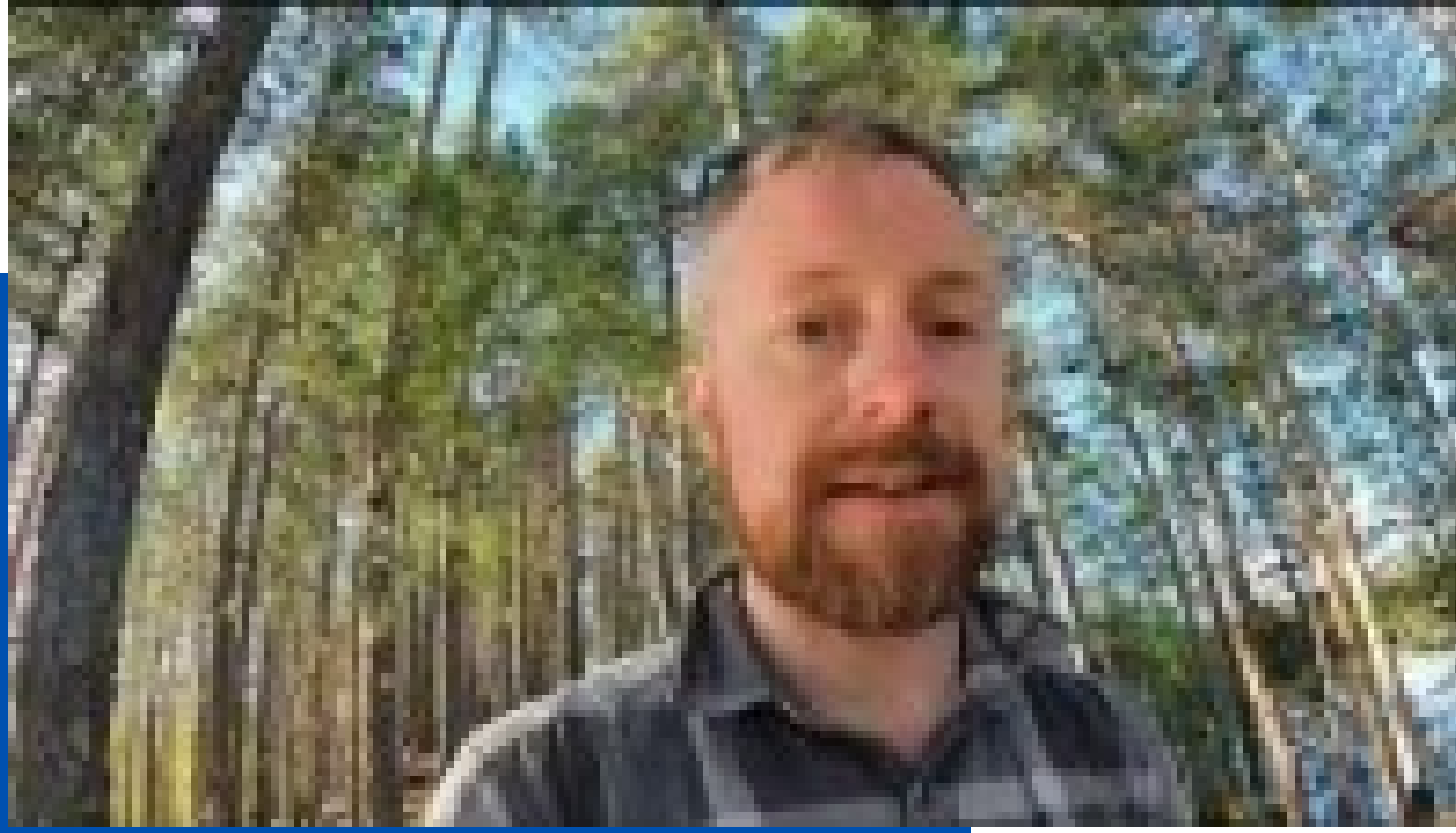
What works?

- ✓ Traffic safety –theme
- ✓ Working at school, with pupils and teachers
- ✓ Virtual classes and field–trips combined
- ✓ Visible actions – i.e. implementation of traffic safety measures
- ✓ Data: results that are easy to communicate

What does not?

- ❖ Giving instructions to the schools from above
- ❖ The responsibilities of traffic safety related issues are not clear

Thanks!



Anna Huttunen, Project Manager, City of Lahti
Matti Pesu, Making Sense Oy

LAHTI

Smart Parking in the City of Turku

The data driven future

Teemu Peltonen and Juha Pulmuranta
ECOMM, 31.5.2022

CITY OF TURKU

TURKU AMK
TURKU UNIVERSITY OF APPLIED SCIENCES

Low-carbon transport in mobility hubs

6Aika

Leverage from the EU 2014–2020

European Union
European Regional Development Fund

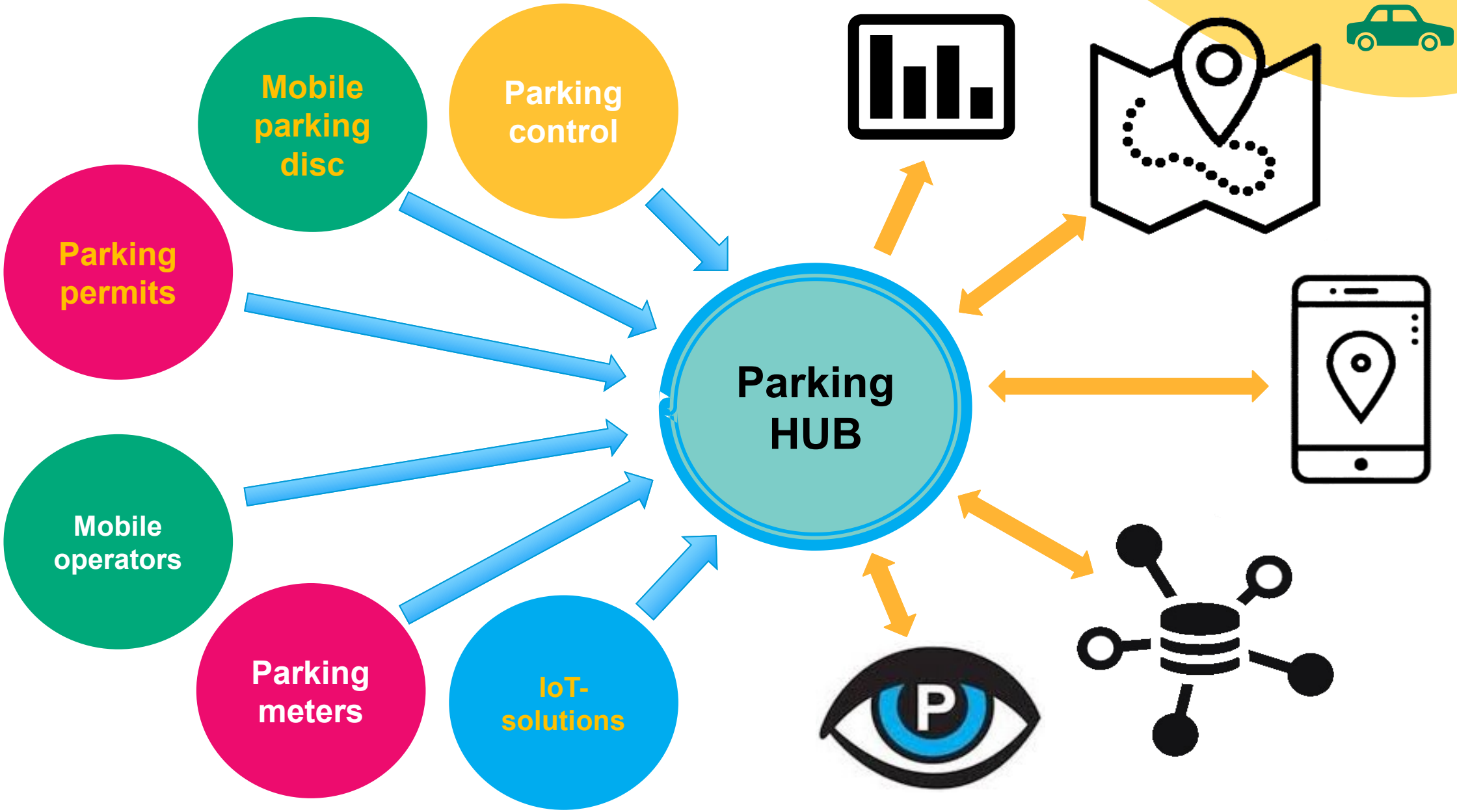
Helsinki-Uusimaa Regional Council

Smart Parking

The challenge

- Limited on-street space, lots of old buildings with very limited on property parking spaces
- High demand of parking space – residential and business
- Personal car -oriented attitudes
  - On-street parking before parking houses
  - Survey: 26% of responders rather spend 10 minutes or over searching for parking space than walk more than two city blocks
- For whom is the city space? What is the driving force for the vitality of the city center?

The Parking Hub



What is it all about?

The Parking Hub

- Digital twin of parking
- Open public API, open-source system available in GitHUB
- Real-time parking availability based on parking payment information
- Data-driven mobility, parking and finance planning
- End-user services
- Future development plans
  - Combine parking control inspection data and payments data – predictive ML model with GAN
  - Bring data part of MaaS ecosystem
  - Permits, IoT API, dynamic pricing, logistics layer

Co-innovation with companies

BRIGHTHOUSE® INTELLIGENCE

Wapice

MARSHALL AI

etsiparkki.fi by ysp a dynniq company

SHARE WAY

coreOrient

eParkly

ENTERLOT

GISPO

Pilots

Reducing traffic emissions is a must for Turku to achieve its goal of carbon neutrality in 2029.

Over the summer and autumn 2021, several car parking pilots were carried out around the city.

The pilots aimed to discover new low-carbon solutions that would have the potential to work on market terms.

Parking guidance during events

Parking marketplace

Parking benefit for carpooling

Peer-to-peer renting of parking spaces

Convenient roadside parking

Situational picture of city centre traffic

Roadside parking space reservation

Guidance to parking spaces

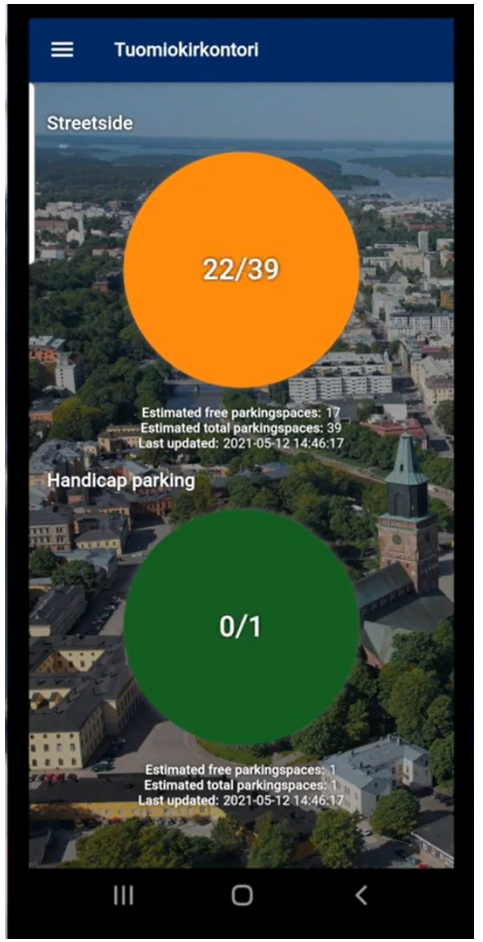
Convenient roadside parking

Camera footage and machine vision were used to gather parking availability data on about 40 parking spaces in the Tuomionkirkontori square.

BrightPark mobile app used geofencing and informed drivers of the number of available spaces.

The app was downloaded by 400 users who used it 900 times.

The development idea is to deliver the technology to other actors in the sector (i.e. parking payment operators).



BRIGHTHOUSE® INTELLIGENCE

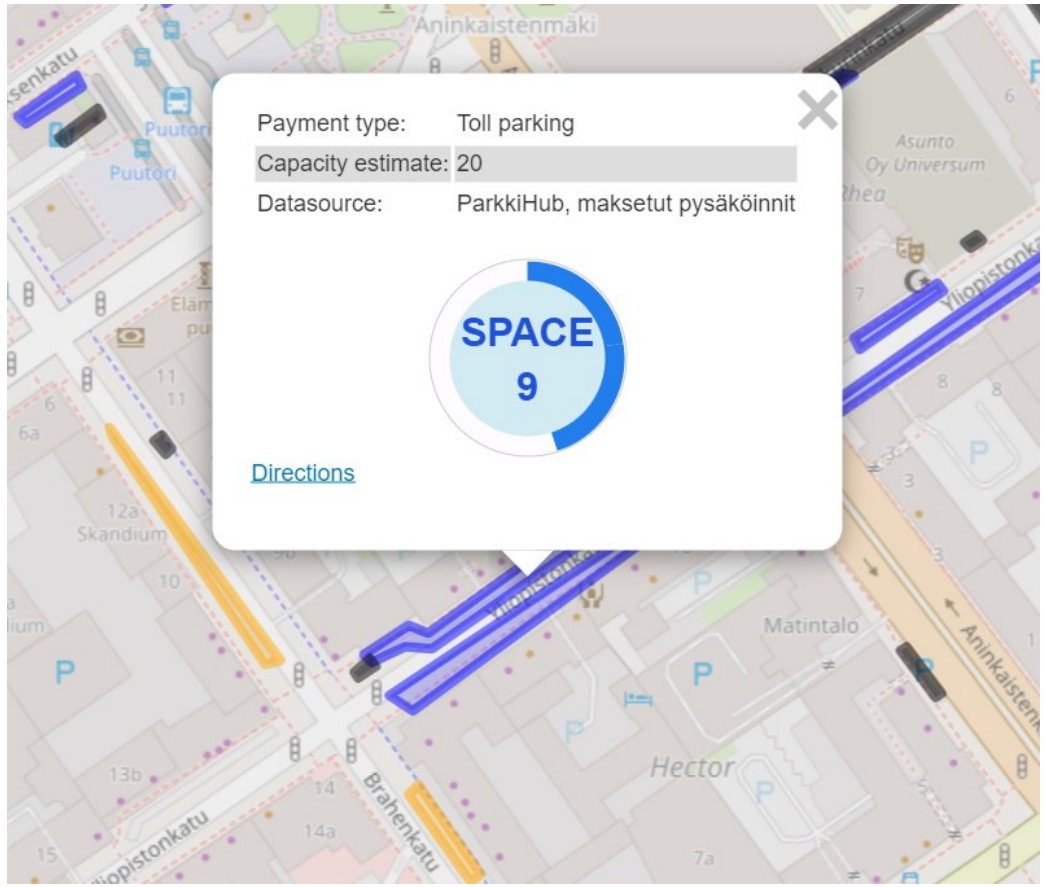
Guidance to parking spaces

People could see information on parking spaces in the city centre at **etsiparkki.fi** based on data from the parking HUB.

The service showed the location of street-side parking space, the estimated utilisation rate (based on parking hub) and directions to available space.

Over 400 individual users who made 50 route inquiries.

The service is scaling up to the City of Oulu.



etsiparkki.fi by ysp a dynniq company

Parking marketplace

The eParkly service showed the real-time utilisation of the selected parking spaces based on camera footage and machine vision.

Marketplace changes the price of parking dynamically depending on demand and maximizes parking revenue.

Driving instructions were also provided to the selected parking space.

Pilot period was limited to city employees only, but the goal is to make eParkly an international export product.

Photo: Juha Pulmuranta, City of Turku

eParkly

Peer-to-peer renting of parking spaces

The pilot involved individuals, housing cooperatives and companies renting out their parking spaces in the **Shareway app** getting 60 % of the rental price.

Also, people looking for a parking space could rent the available private parking spaces for 1 €/h, or 10 € /day ja 20 € /week.

Over 700 downloads mainly seeking for a parking space (sharing economy requires more marketing).

Steps were taken to extend the service to other cities as well.

Photo: Aili Autio, City of Turku

SHARE WAY

Lessons learned

Lessons learned

Some companies maybe too technologically driven and forget the business case.

Getting user feedback requires incentives and active communication.

The companies criticized the poor availability of open data and the slowness of permit processes (need for a living lab).

Short videos in social media were a great way to get local residents interested in the pilots.

The number of users fell short of the target (partly due to the pandemic).

Companies were satisfied with the cooperation with the city and reported of growing their business and know-how.

Thank you!

turku.fi/en/parkingpilots

CITY OF TURKU

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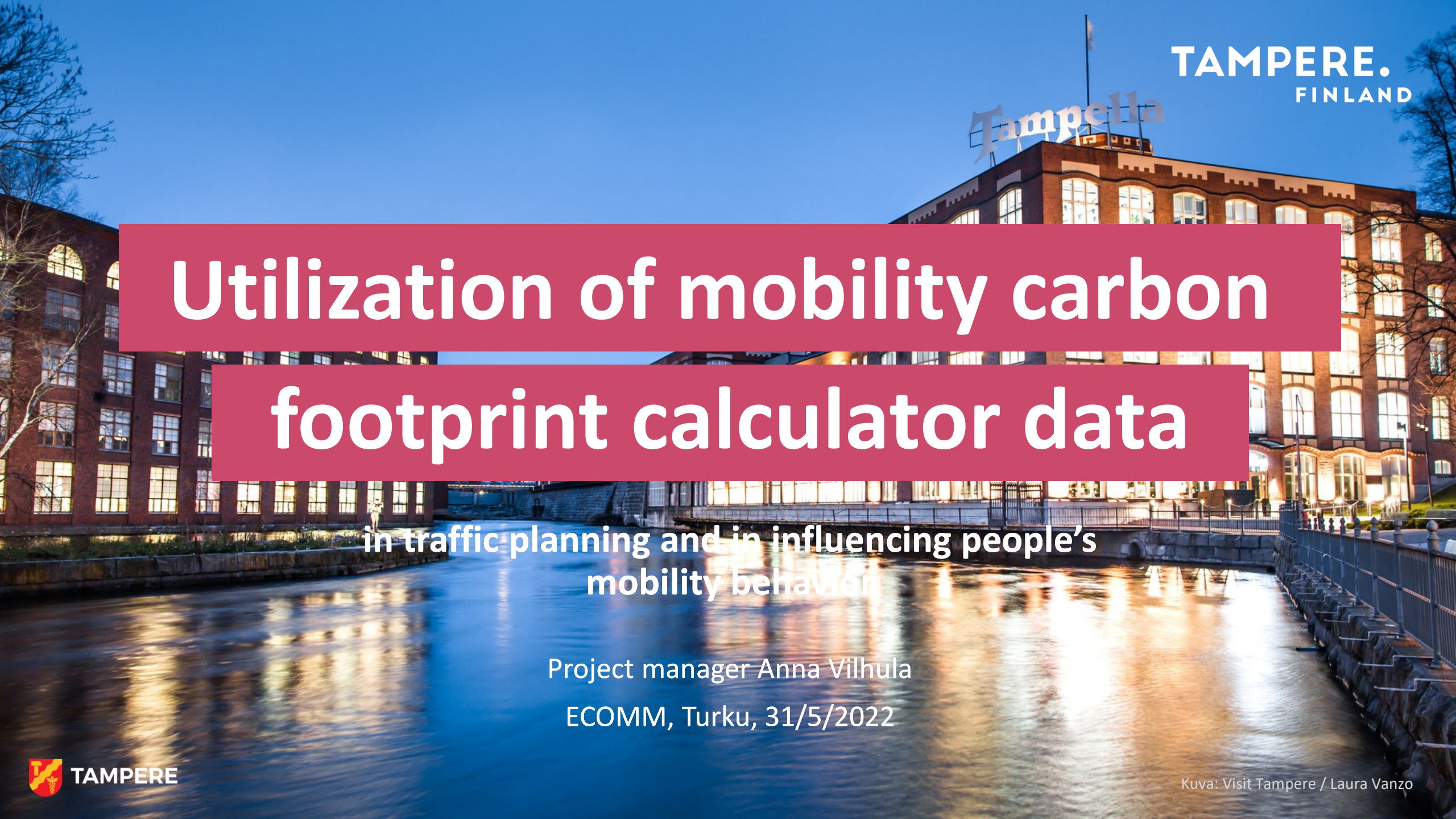


TAMPERE.
FINLAND

Utilization of mobility carbon footprint calculator data

in traffic planning and in influencing people's mobility behavior

Project manager Anna Vilhula

ECOMM, Turku, 31/5/2022

TAMPERE

Kuva: Visit Tampere / Laura Vanzo

Project and WP3 Tampere

- STARDUST project aims to create smart, energy-efficient and citizen-oriented cities.
- Duration: 6,5 years (Oct 2017 to March 2024)
- EU funding: € 18 million (Horizon 2020)
- 3 lighthouse cities, 4 follower cities

TAMPERE · aurinkotehdas · TaloTohtori We digitalize buildings · SKANSKA · TAMPEREEN sähkölaitos · VTT

In Tampere work package the aim is to

- increase the energy efficiency of buildings,
- integrate renewable energy sources into district heating
- **promote sustainable transport and**
- **involve residents and citizens.**


Photo: Visit Tampere / Laura Vanzo

The need

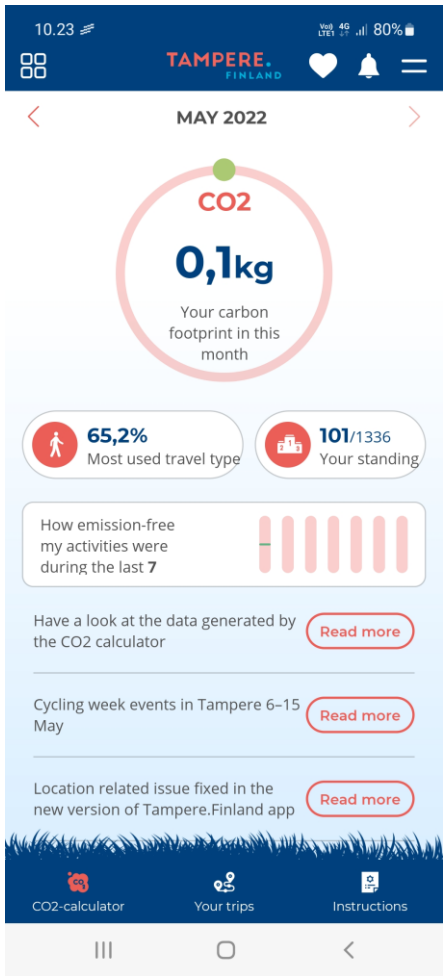
- to make residents aware of how their own choices can affect the city's carbon emissions
- to increase cycling, walking and use of public transport
- for information on where and how people move
- for mobility data to develop better services

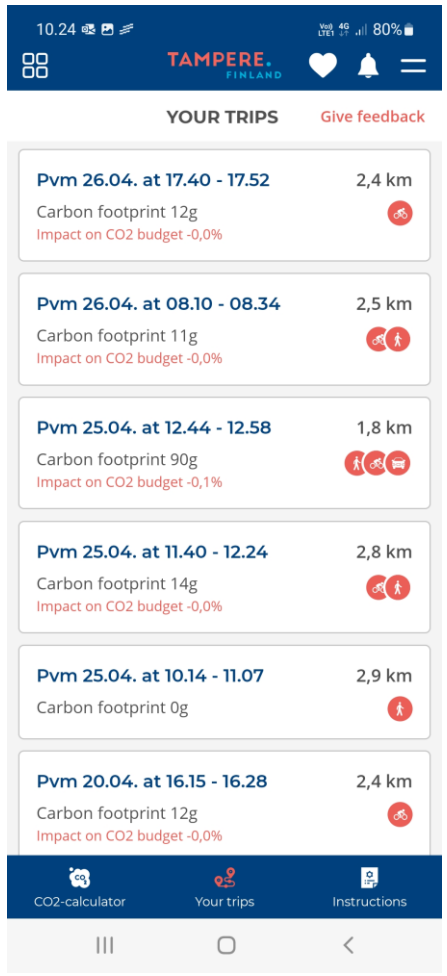
Photo: Laura Vanzo, Visit Tampere

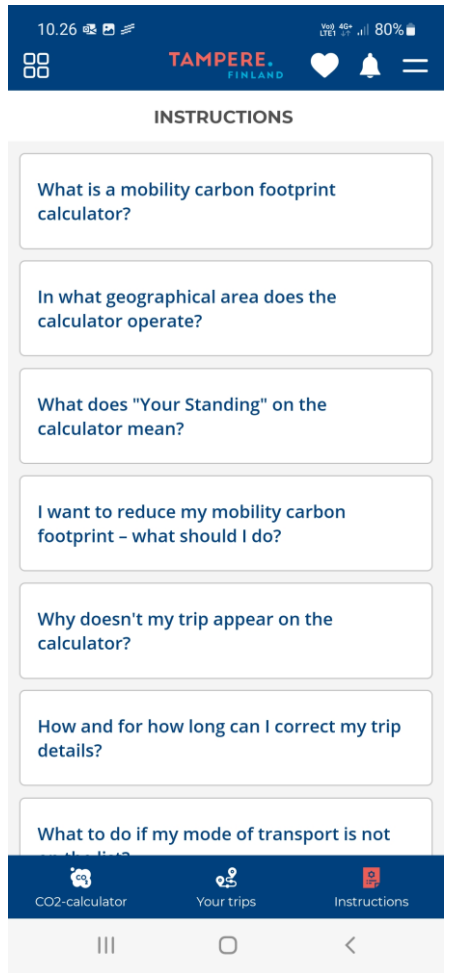
The solution

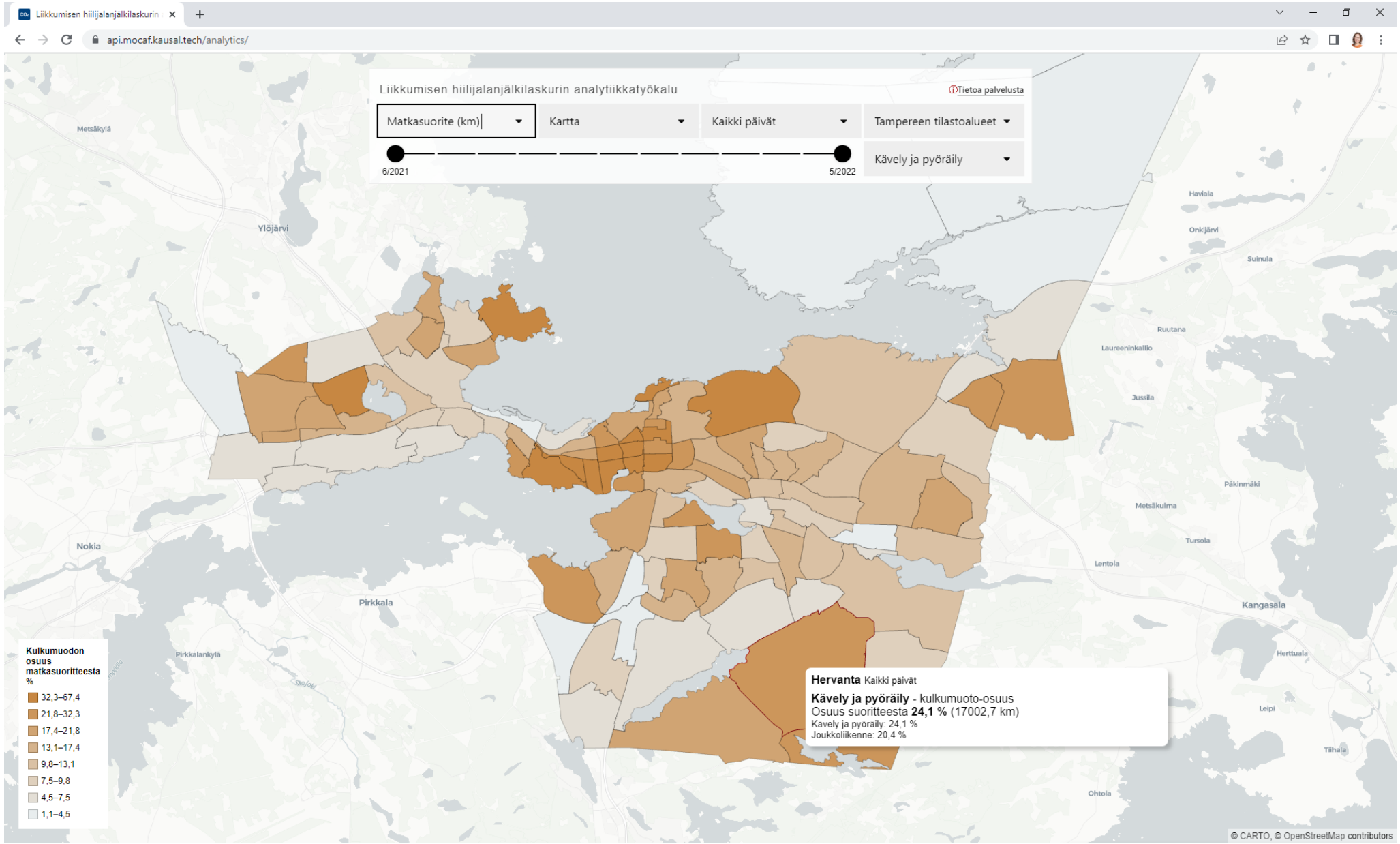
- Not a new application, but part of the existing city app “Tampere.Finland”
- Open-source implementation
- Automatic transport mode detection
- Offers for low carbon mobility
- A separate analytics tool with data visualizations: api.mocaf.kausal.tech/analytics


10.15
81%
TAMPERE. FINLAND
+9
56%
3m/s
Air quality
ABOVE THE MARK
Your shortcuts
Edit choices
TAMPERE PASS
PUBLIC TRANSPORTATION
PARTICIPATE AND INFLUENCE
PIRKANMAA LIBRARY CARD
EVENTS AND ATTRACTIONS
PIRKANMAA WASTE STATIONS
VISIT TAMPERE RECOMMENDS
Beta
YOUR MOBILITY CARBON FOOTPRINT
OWN FAVORITES
No favorites
Latest notifications


10.23
80%
TAMPERE. FINLAND
MAY 2022
CO2
0,1kg
Your carbon footprint in this month
65,2%
Most used travel type
101/1336
Your standing
How emission-free my activities were during the last 7
Have a look at the data generated by the CO2 calculator
Read more
Cycling week events in Tampere 6–15 May
Read more
Location related issue fixed in the new version of Tampere.Finland app
Read more
CO2-calculator
Your trips
Instructions


10.24
80%
TAMPERE. FINLAND
YOUR TRIPS
Give feedback
Pvm 26.04. at 17.40 - 17.52
2,4 km
Carbon footprint 12g
Impact on CO2 budget -0,0%
Pvm 26.04. at 08.10 - 08.34
2,5 km
Carbon footprint 11g
Impact on CO2 budget -0,0%
Pvm 25.04. at 12.44 - 12.58
1,8 km
Carbon footprint 90g
Impact on CO2 budget -0,1%
Pvm 25.04. at 11.40 - 12.24
2,8 km
Carbon footprint 14g
Impact on CO2 budget -0,0%
Pvm 25.04. at 10.14 - 11.07
2,9 km
Carbon footprint 0g
Pvm 20.04. at 16.15 - 16.28
2,4 km
Carbon footprint 12g
Impact on CO2 budget -0,0%
CO2-calculator
Your trips
Instructions

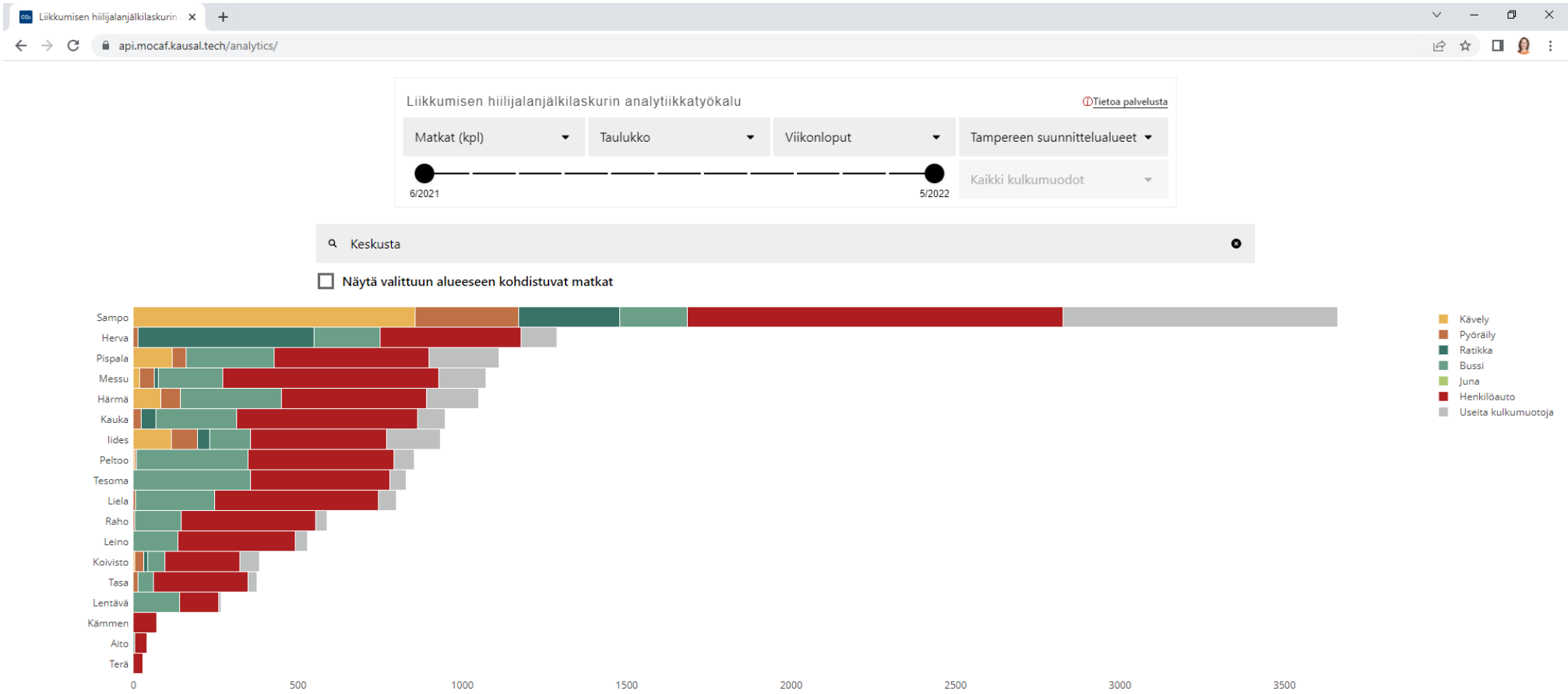

10.26
80%
TAMPERE. FINLAND
INSTRUCTIONS
What is a mobility carbon footprint calculator?
In what geographical area does the calculator operate?
What does "Your Standing" on the calculator mean?
I want to reduce my mobility carbon footprint – what should I do?
Why doesn't my trip appear on the calculator?
How and for how long can I correct my trip details?
What to do if my mode of transport is not
CO2-calculator
Your trips
Instructions



TAMPERE. FINLAND

TAMPERE

api.mocaf.kausal.tech/analytics



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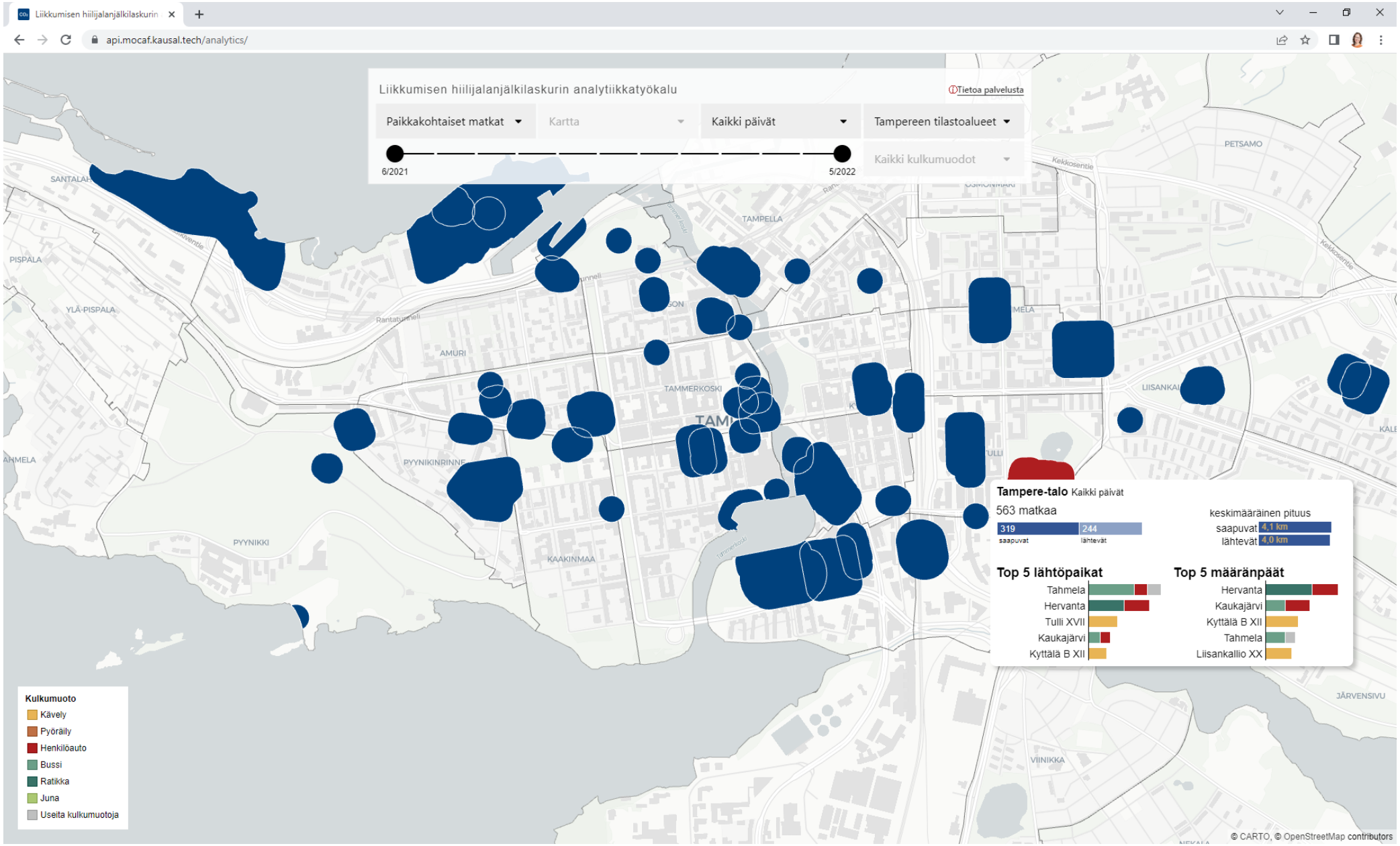

api.mocaf.kausal.tech/analytics

CO2 calculator data

- Daily statistics on how much users have traveled and in what mode, and how many kilometers.
- Trip-specific information: date, mode of transport, length and time and estimate of CO2 emissions from the trip.

	date	device	mode	mode_variant	length	carbon_footprint	mins
1	2021-06-01	94ca467c	car	average_ice	4729	877.7	7.2
2	2021-06-01	34fb4ff0	walk	NA	367	0.0	5.4
3	2021-06-01	df99c51b	car	NA	847	157.2	3.5
4	2021-06-01	34fb4ff0	bus	NA	6704	423.7	16.2
5	2021-06-01	2766f425	car	NA	1540	285.8	3.9
6	2021-06-01	8b9ddbf2	bicycle	NA	5864	29.3	22.2
7	2021-06-01	34fb4ff0	car	average_ice	8005	495.2	9.8
8	2021-06-01	a75d59f4	walk	NA	377	0.0	31.3
9	2021-06-01	94ca467c	walk	NA	6782	0.0	73.7
10	2021-06-01	2766f425	bicycle	NA	5654	28.3	17.4
11	2021-06-01	8b9ddbf2	car	NA	924	171.4	3.0
12	2021-06-01	a73d145b	walk	NA	9909	0.0	125.1
13	2021-06-01	1c593ce9	walk	NA	103	0.0	7.2
14	2021-06-01	df99c51b	bicycle	NA	2559	12.8	10.9
15	2021-06-01	52fbb53e	bicycle	NA	1952	9.8	8.5
16	2021-06-01	2194931a	bicycle	NA	3571	17.9	16.4
17	2021-06-01	52fbb53e	bus	NA	876	55.3	1.8

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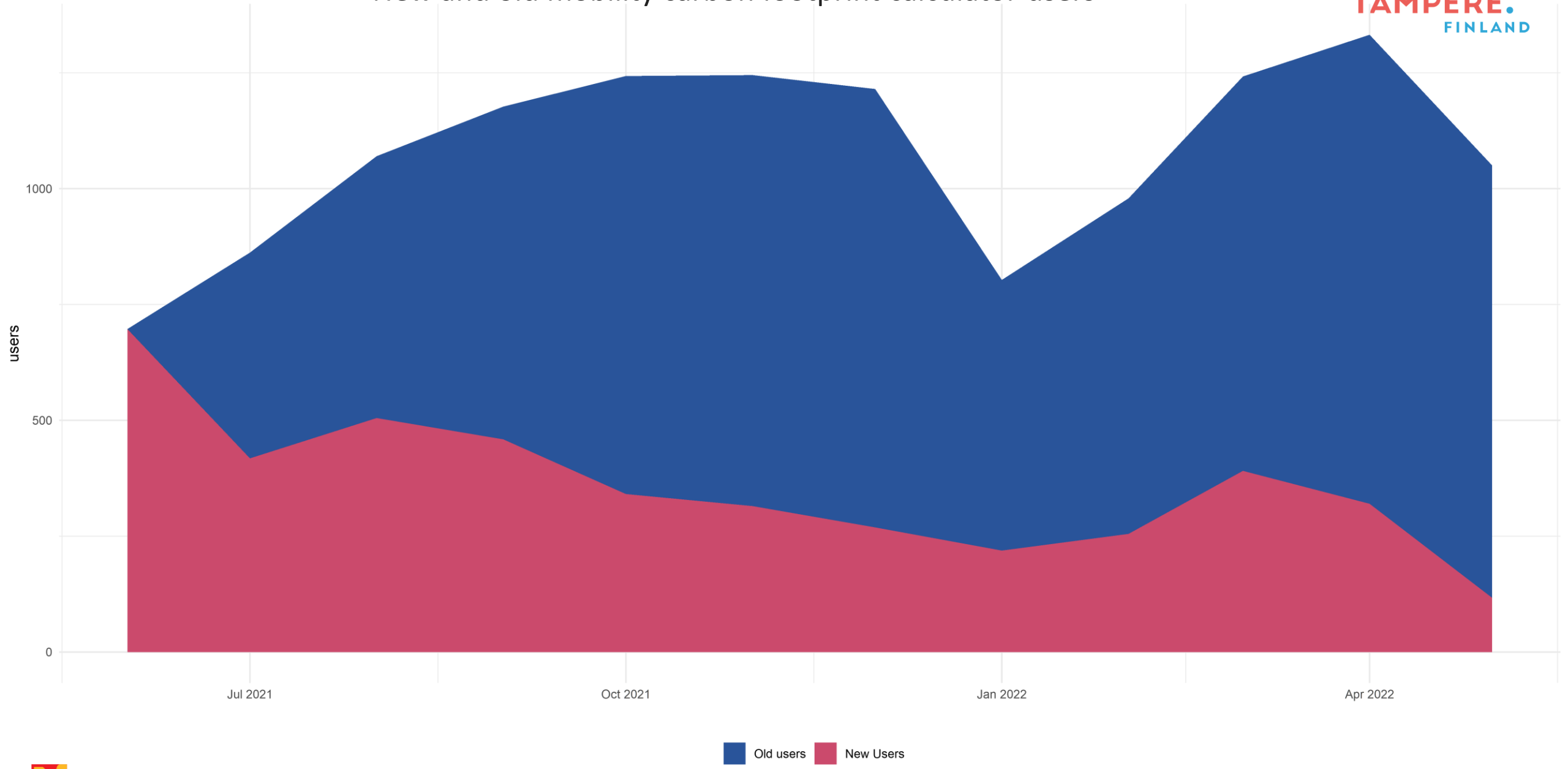
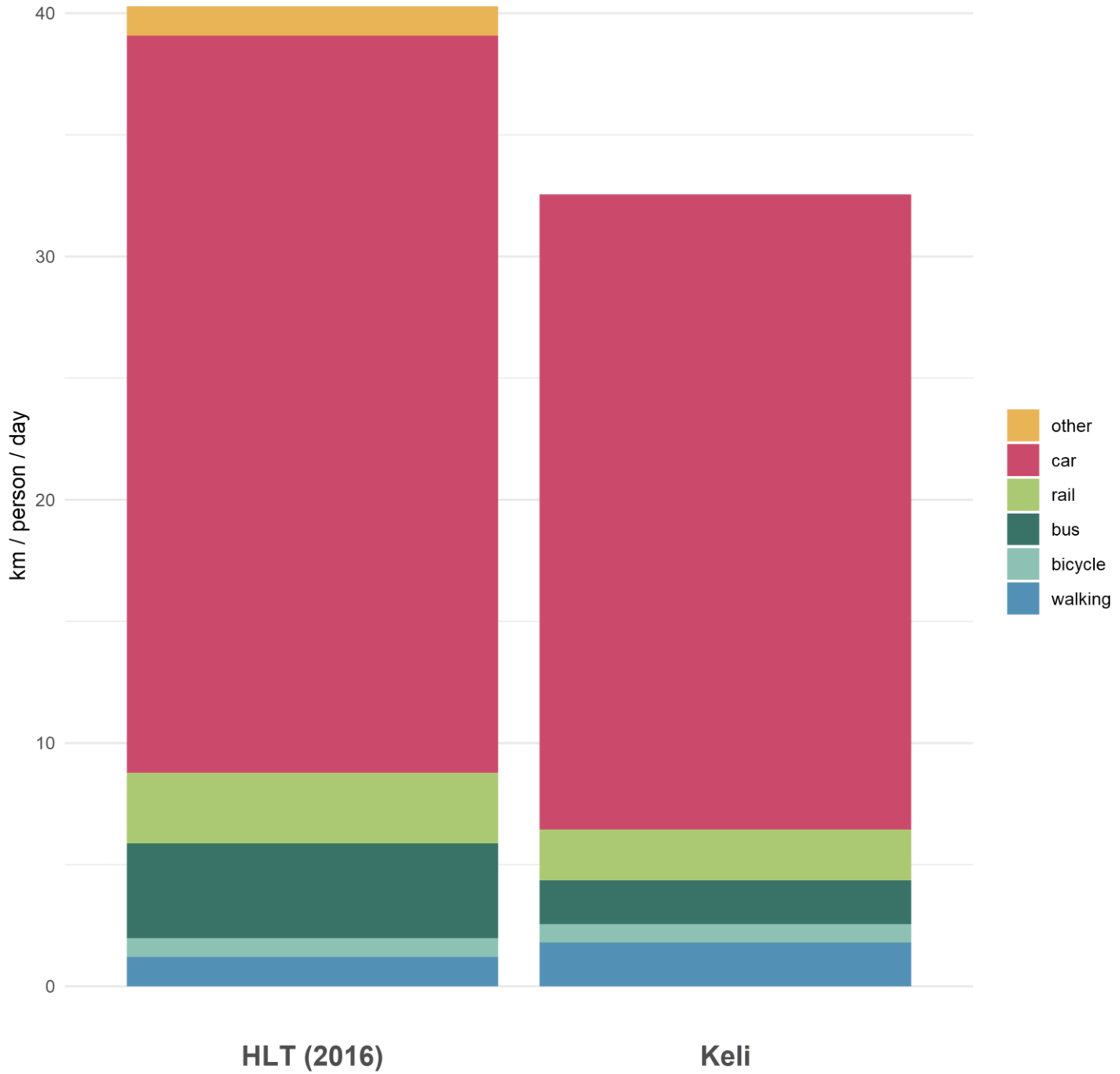
New and old mobility carbon footprint calculator users





Transport mode shares (km / person / day) in National passenger transport survey (2016) and calculator / Keli research project

Data challenges

- There are some errors in the data as the solution does not always work perfectly.
- For GDPR reasons, raw data is discarded after 3 days. Thus, researchers and traffic planners cannot be given accurate but statistical data.
- There is no background information about users.
- Not enough users to statistically generalize and to use in traffic planning?
- Traffic planners are used to utilize different kind of data.
- The purpose of the trip is not clear from the data.

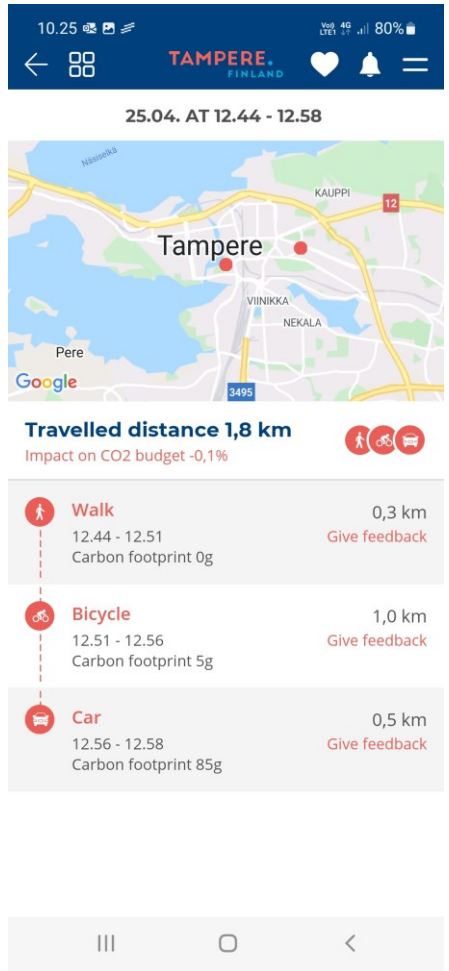



Photo: Visit Tampere / Laura Vanzo

Opportunities

- Unique data that the city has never had before.
- Time series and comparisons possible.
- One can combine with other data, and examine, for example, whether the mode of travel correlates with the weather.

Modal share of weekly travel distances

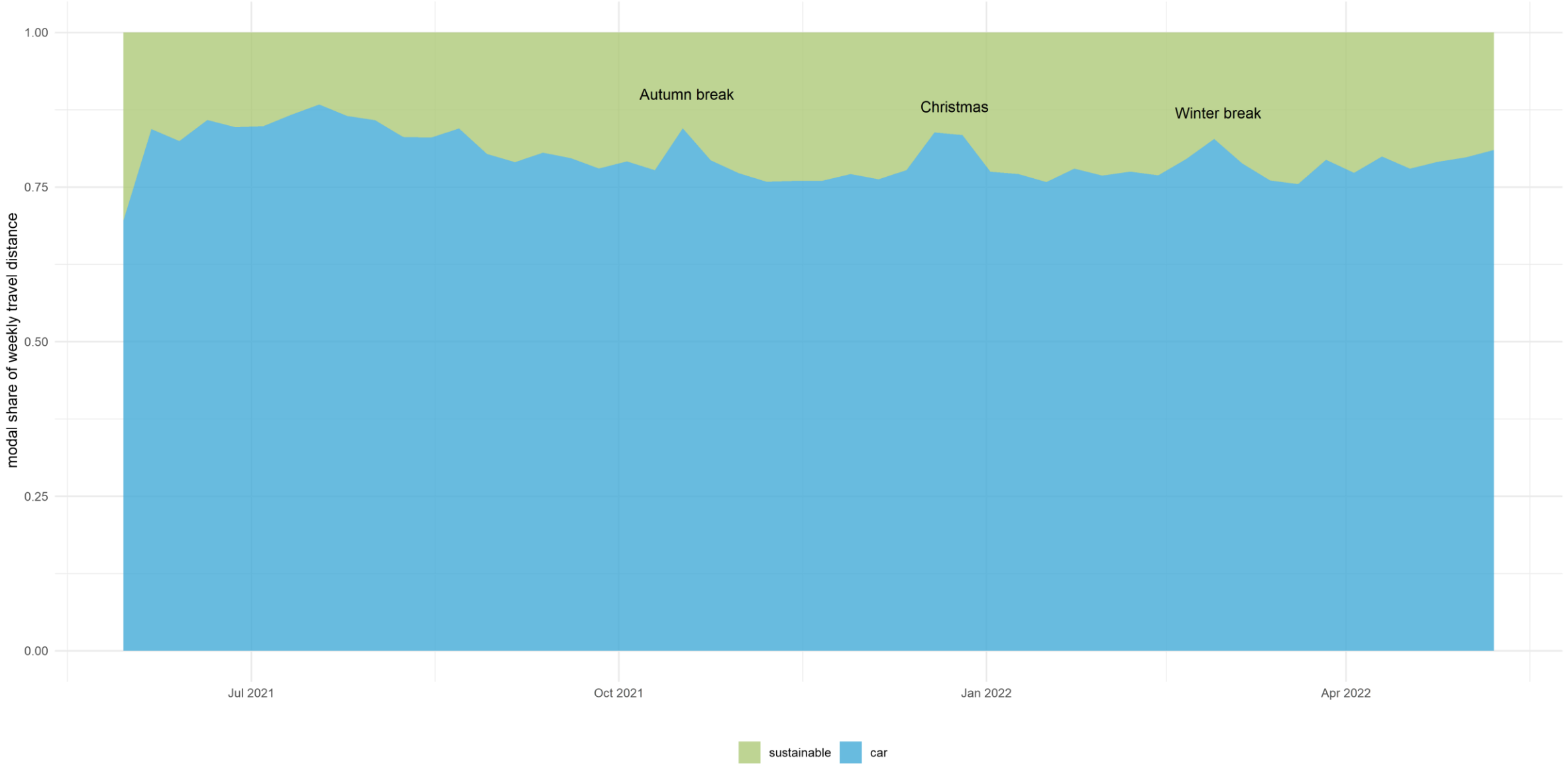


Photo: Visit Tampere / Laura Vanzo

To be continued…

- The Keli research project is investigating whether providing health information can increase sustainable mobility.
- A new section will be developed for the calculator to be published later to all users.

Keli project (1.1.2022–31.5.2023)

- Keli is looking for ways to improve sustainable mobility in everyday life with the Tampere.Finland application's mobility carbon footprint calculator.
- The aim is to find out whether emphasizing health benefits can generate an increase in physical activity.

- **Responsible party:** City of Tampere
- **Other participants:** University of Helsinki, VATT institute for economic research, Geniem Oy, Kausal Oy
- **Funding:** Co-financed by the Finnish Ministry of the Environment as part of the Sustainable City programme


FROM
RESEARCH
TO REALITY.
14-15 June, 2022
Nokia Arena
Tampere, Finland
TAMPERE.
SMART CITY WEEK

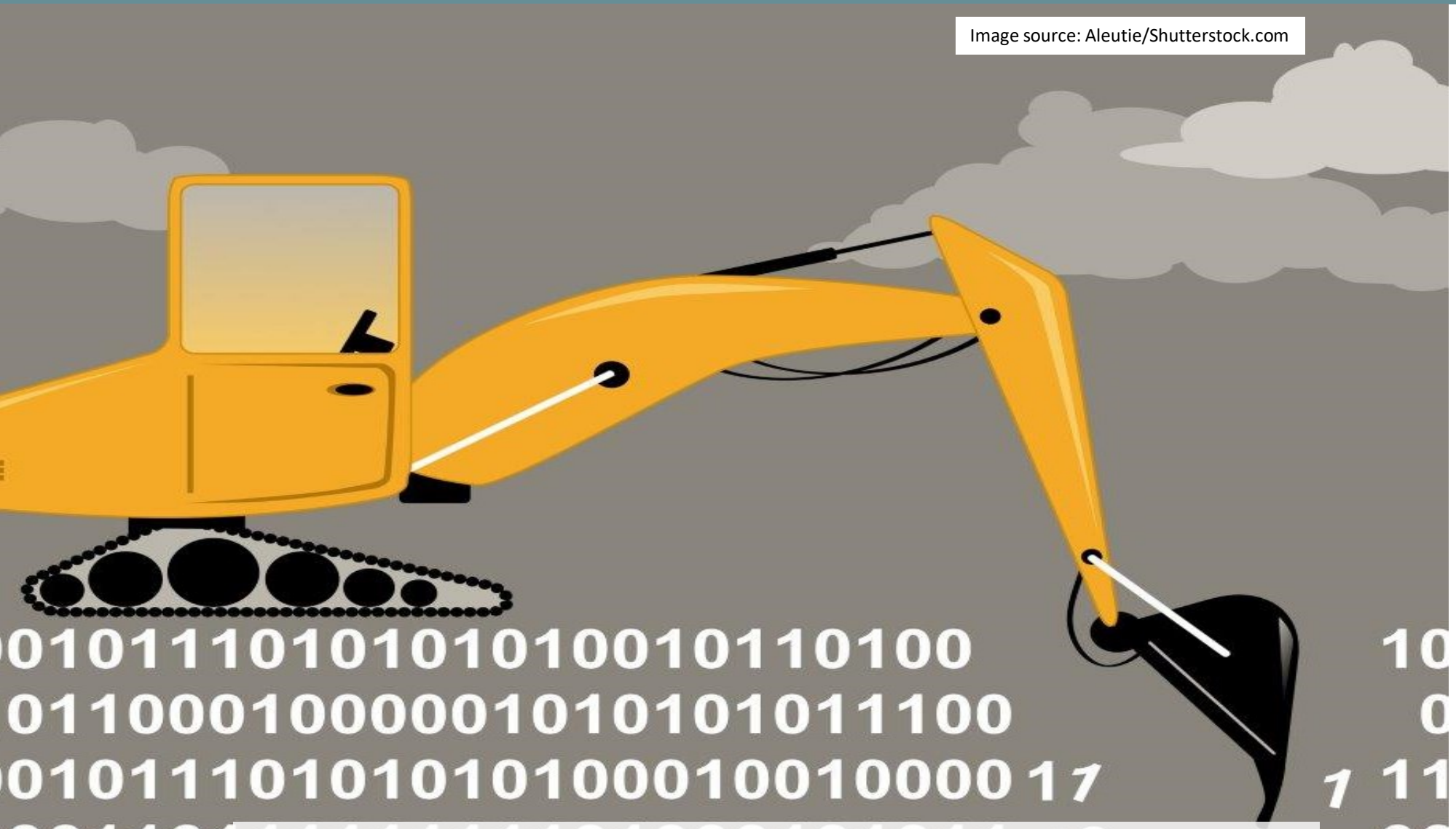


Image source: Aleutie/Shutterstock.com

BUSINESS INTELLIGENCE SOFTWARE, NEW TECHNOLOGY, NEW OPPORTUNITIES? REGIONAL TRANSPORT ANALYSIS THROUGH DATA MINING WITH THE TRAFFIC-FLOW-TRANSPORT-MODEL (TRAVIMO)

Bundesinstitut
für Bau-, Stadt- und
Raumforschung
im Bundesamt für Bauwesen
und Raumordnung

31.05.2022

Dr. Bernd Buthe

WHAT IS BUSINESS INTELLIGENCE?

- Business intelligence (BI) comprises the strategies and technologies used for data analysis and management of information

Image source: DeymosHR/Shutterstock.com

REGIONAL TRANSPORT ANALYSIS THROUGH DATA MINING

BBSR

- Large amounts of data are available in the transport sector, but are not used.

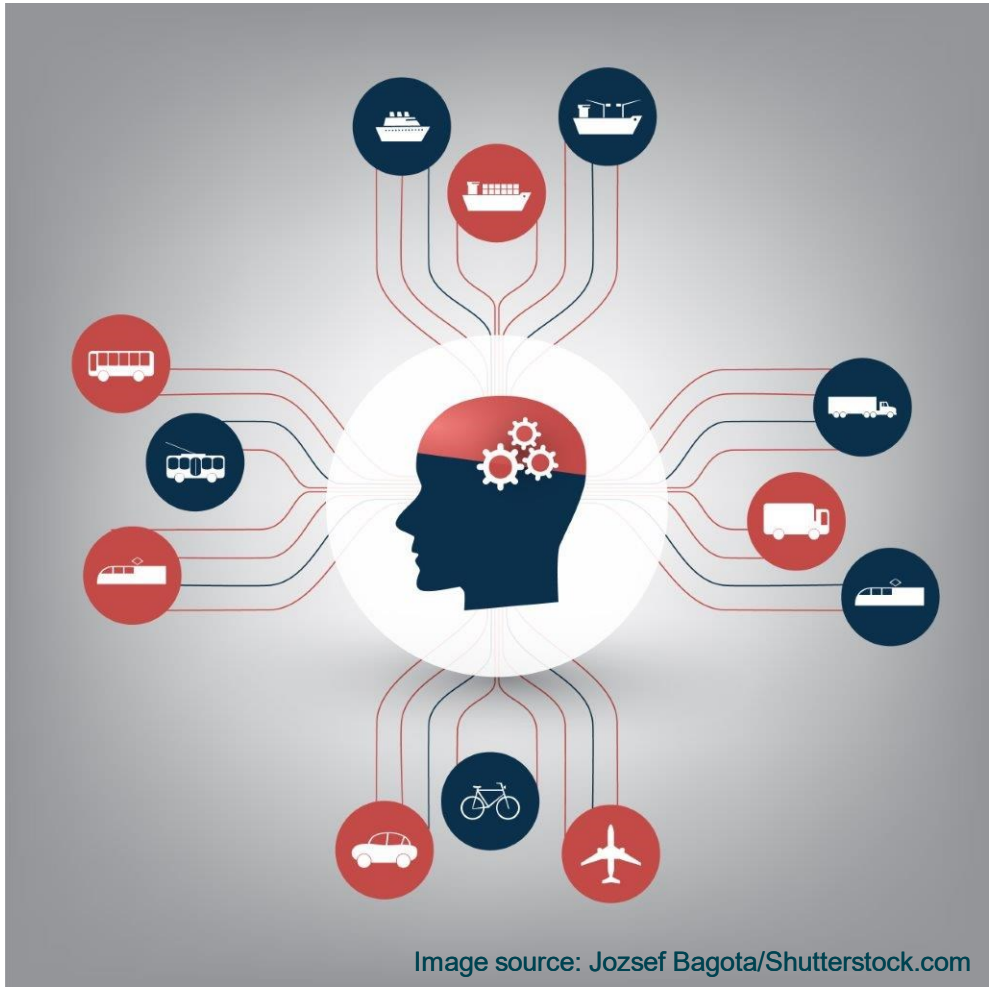


Image source: Jozsef Bagota/Shutterstock.com

Image source: buffaloboy/Shutterstock.com

TRAFFIC FLOW MODEL „TRAVIMO“

- **TraViMo**
  - **Tra**nsport
  - **Vi**sualization
  - **Mo**del

- Systematic collection, analysis and presentation of transport statistics

- Data record structure is not complicated:
  - Starting point / ending point
  - Time indication
  - Means of transport / Mode of transport
  - Category of goods or purpose

Megabyte (MB) = 1 MB →1,44 MB Disk
Gigabyte (GB) = 1.000 MB → 60 GB per hour - Google self driving prototype car
Terabyte (TB) = 1.000.000 MB → 30 TB data per transatlantic flight - Boeing 777

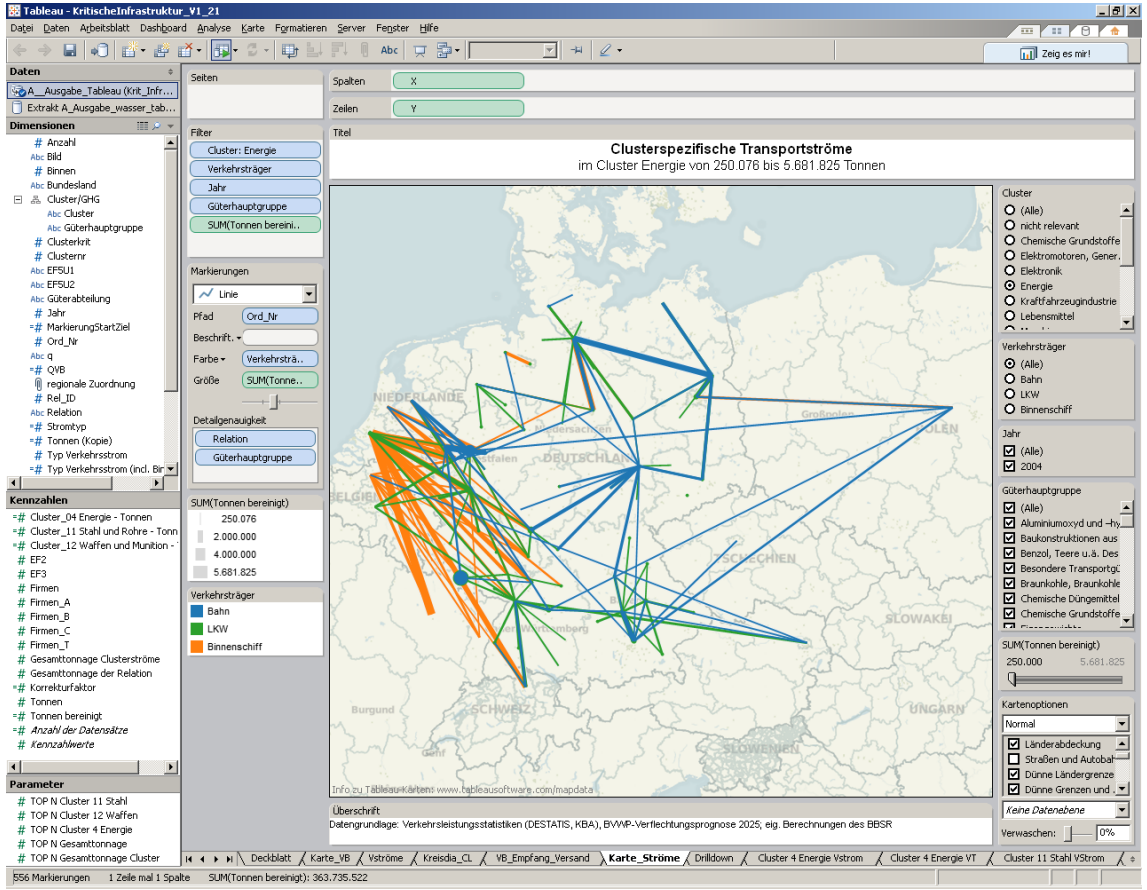
→For the years 2010 / 2014 /2017 / 2030 requires TraViMo 1 TB

ANALYSIS AND PREPARATION WITH „TABLEAU“ SOFTWARE (1/2)

- Business Intelligence Techniques
- Purpose: exploratory data analysis of large data sets
- Search and identification of relationships through visualization
- Author system and reader system

Screenshot: Desktop Version

Expert tool (authoring system)

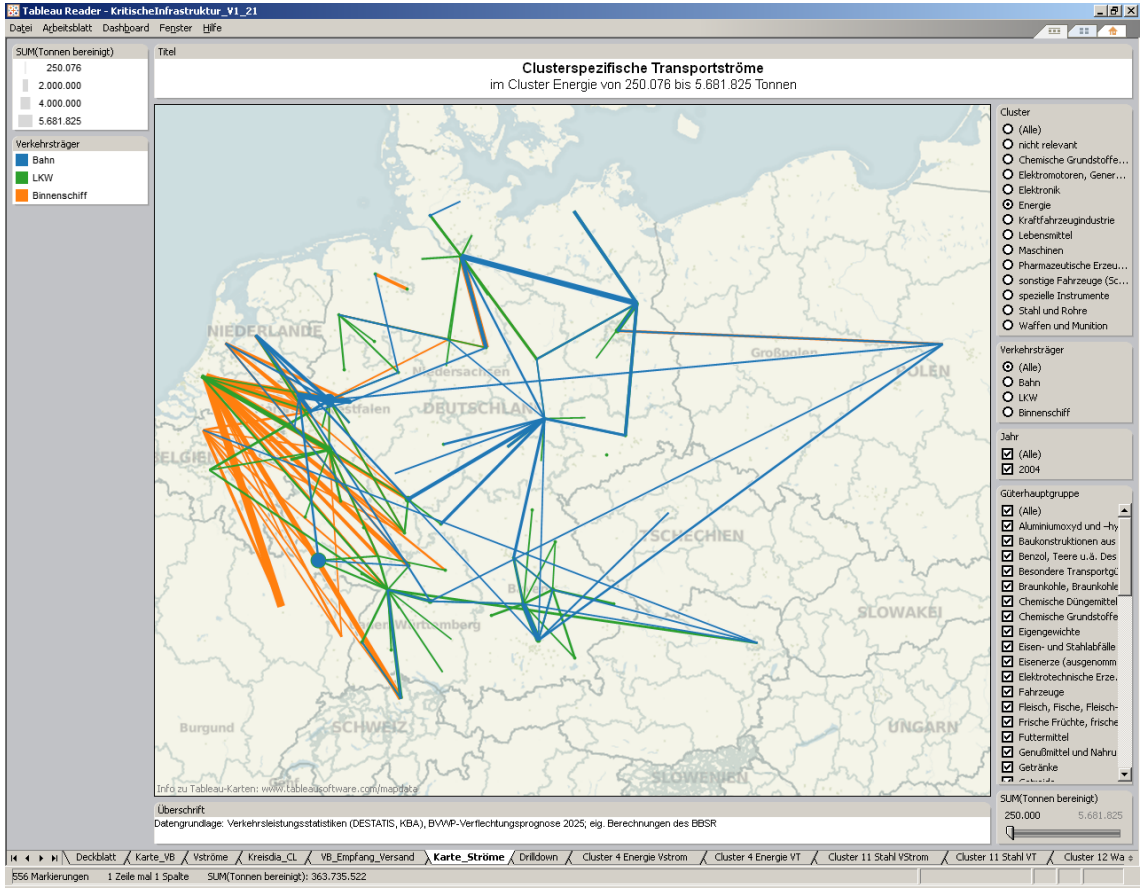


ANALYSIS AND PREPARATION WITH „TABLEAU“ SOFTWARE (2/2)

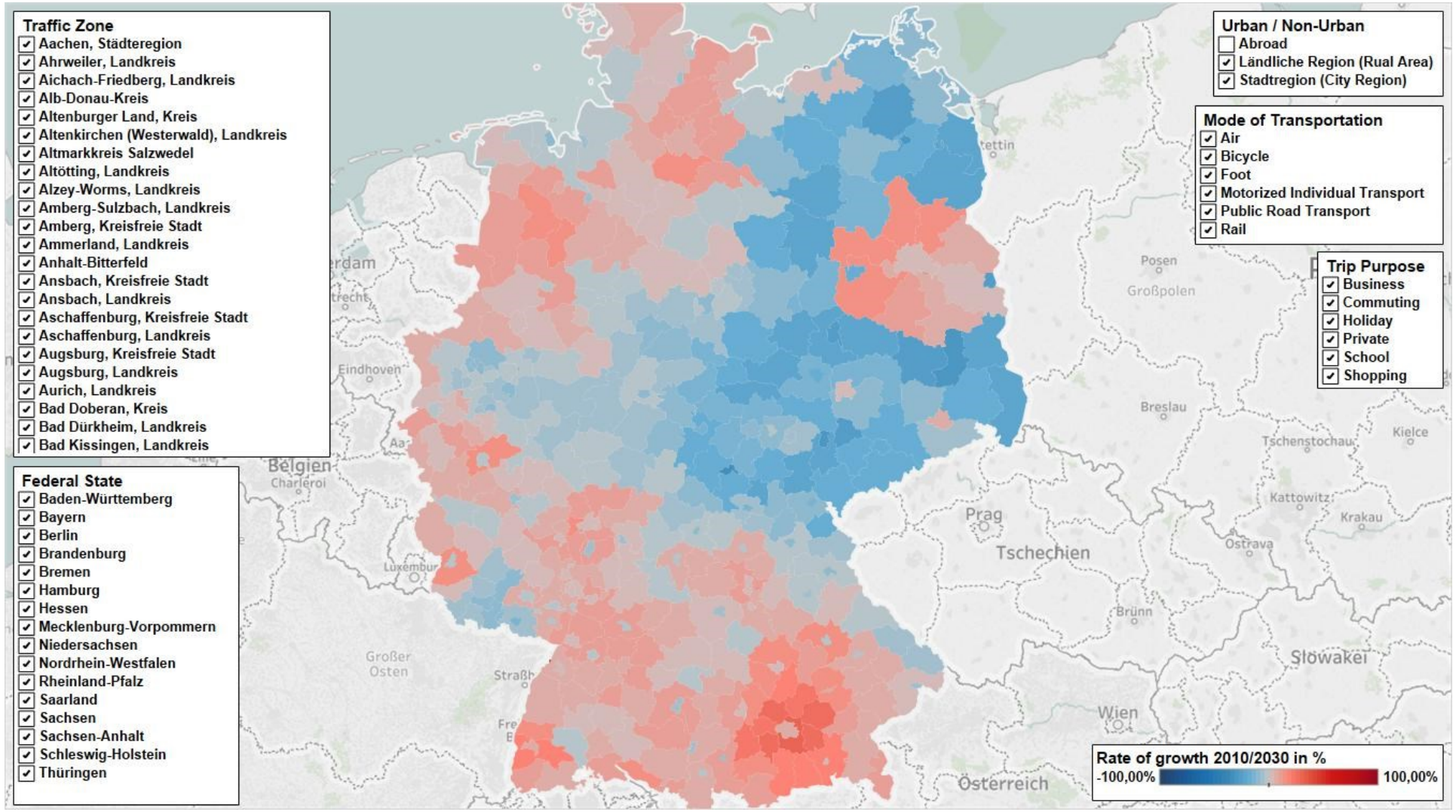
- intuitive usability
- operable without special IT knowledge (databases or statistical software)
- allows filtering, drill-down, and specific ad hoc selections by „normal” users

Screenshot: Reader Version

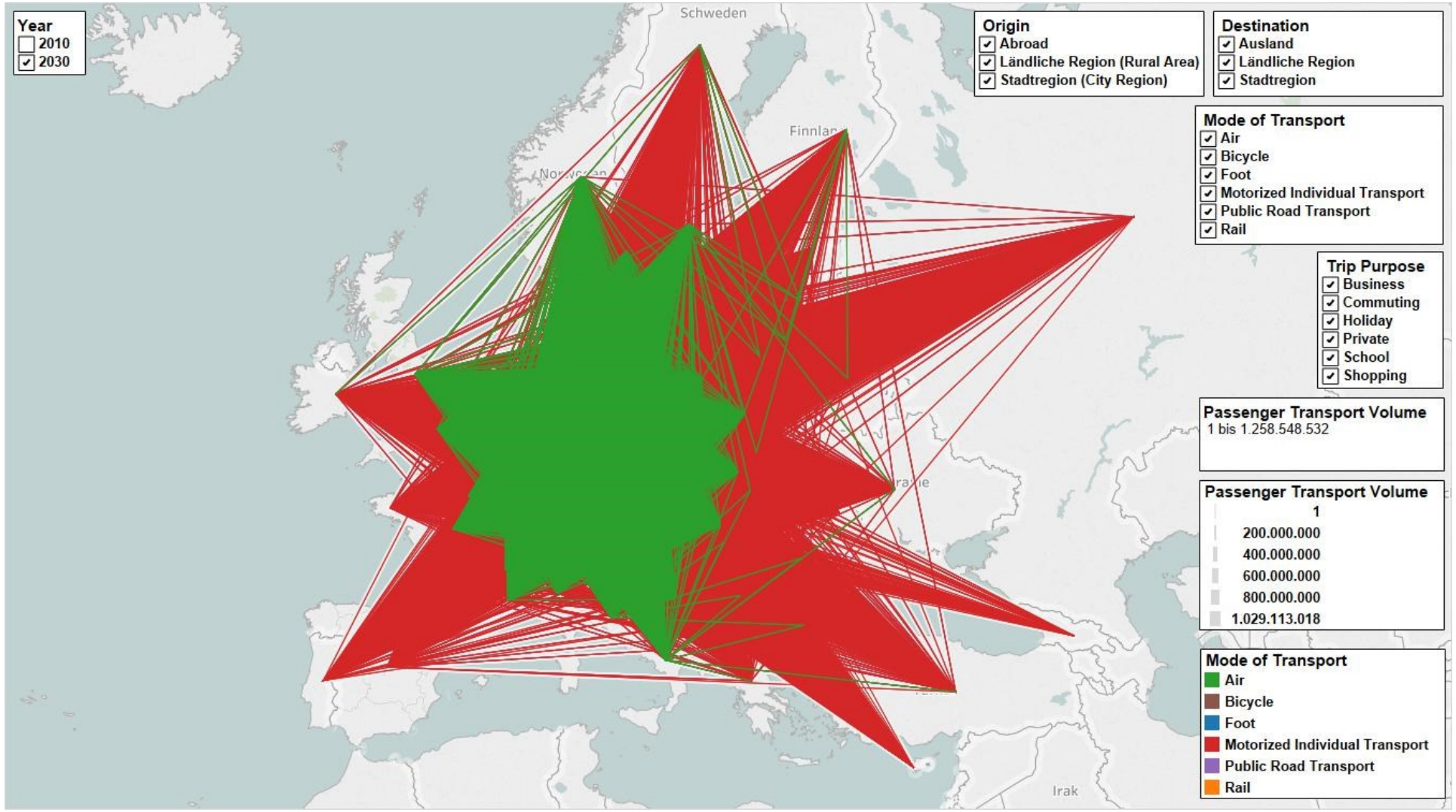
Tool for „normal“ users



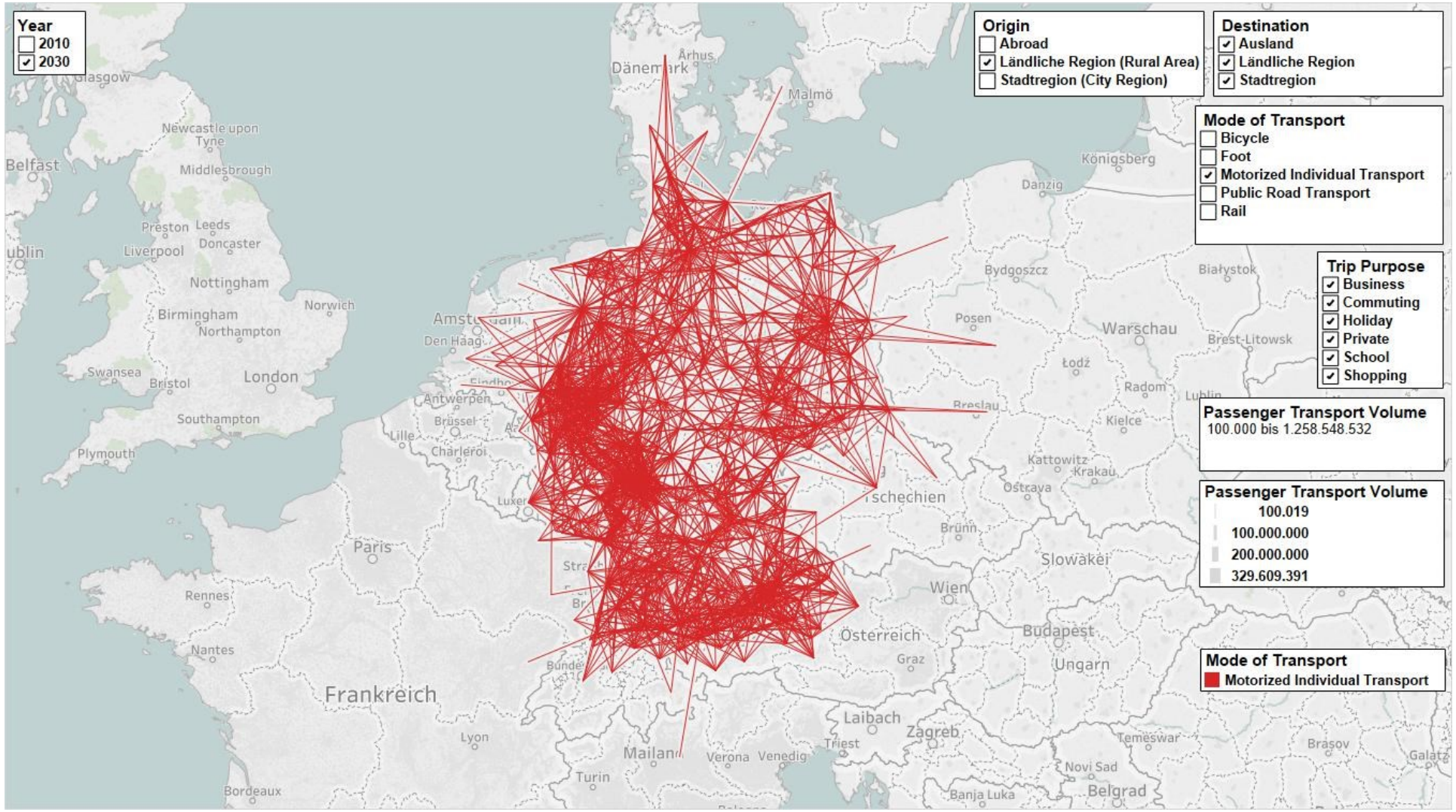
PASSENGER TRANSPORTATION 2010/2030



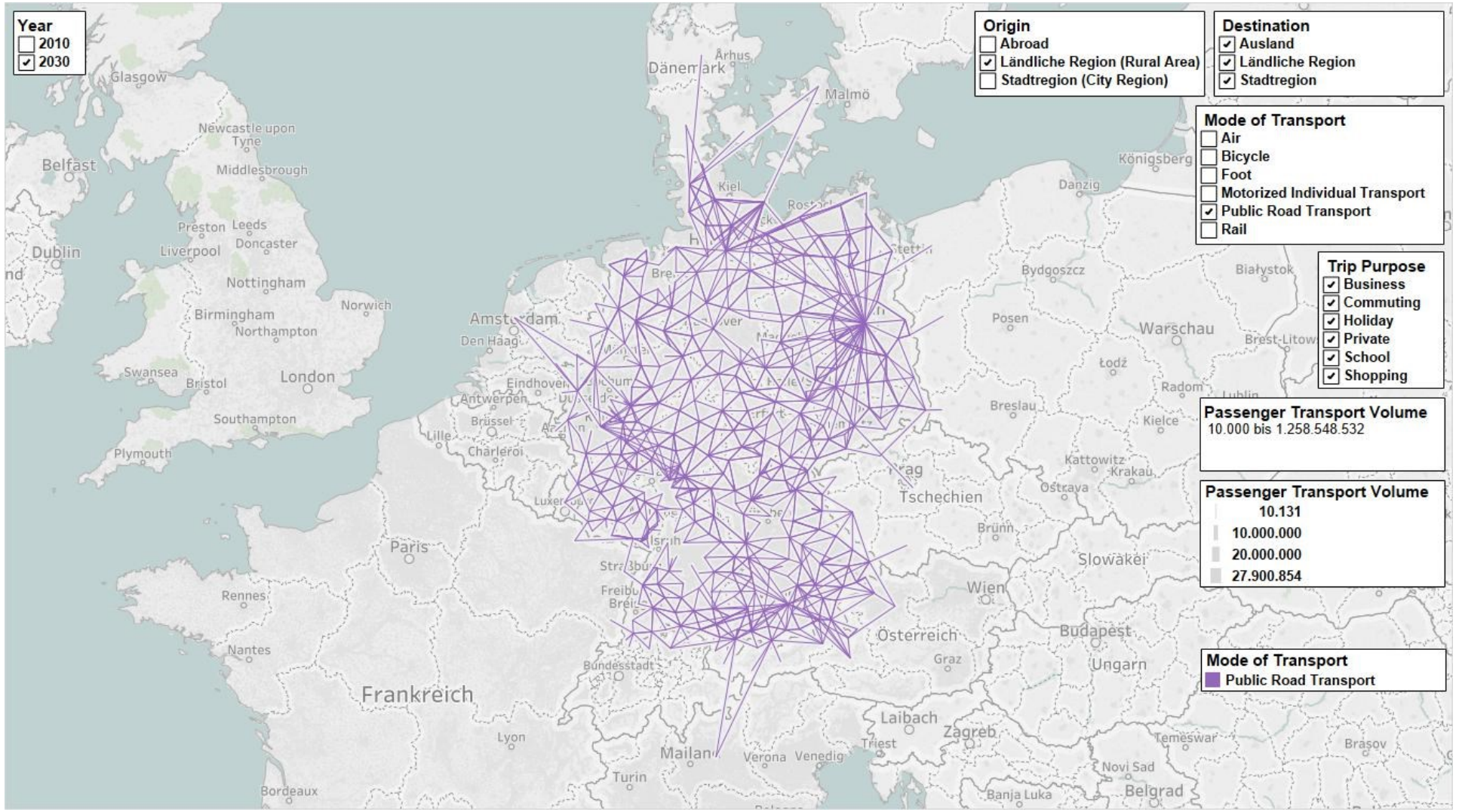
PASSENGER TRANSPORTATION 2010/2030



PASSENGER TRANSPORTATION 2010/2030

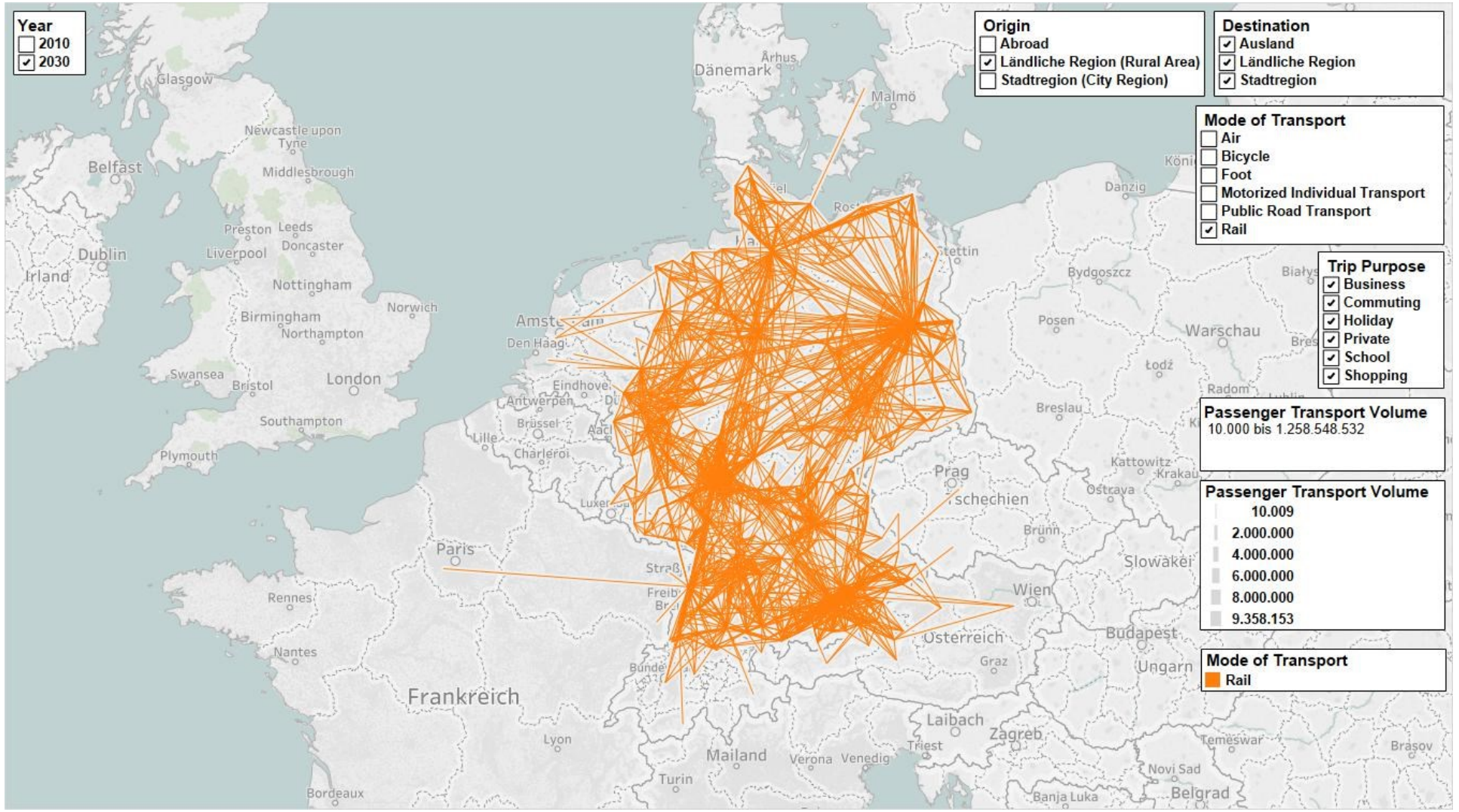


PASSENGER TRANSPORTATION 2010/2030



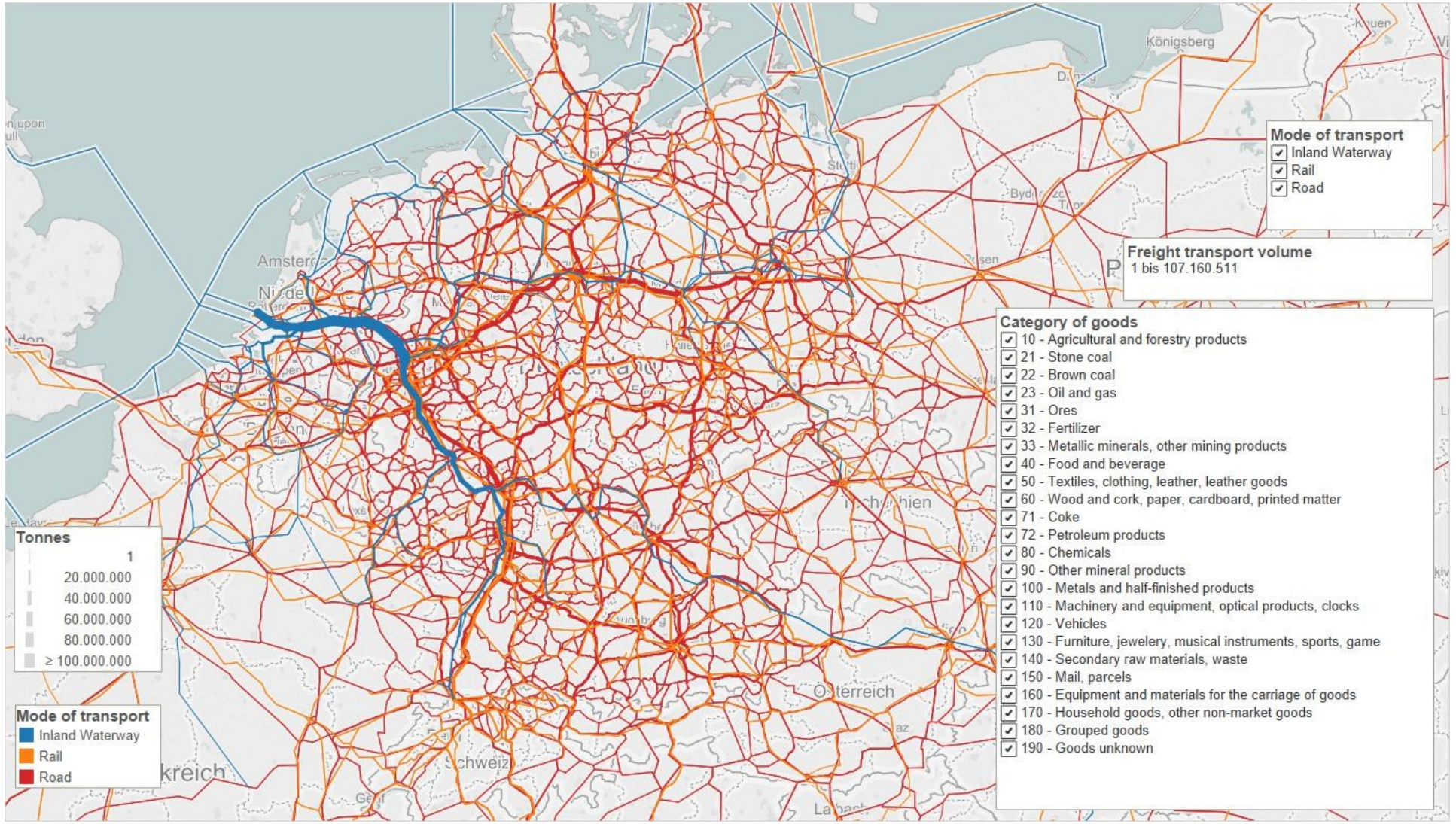
PASSENGER TRANSPORTATION 2010/2030

BBSR



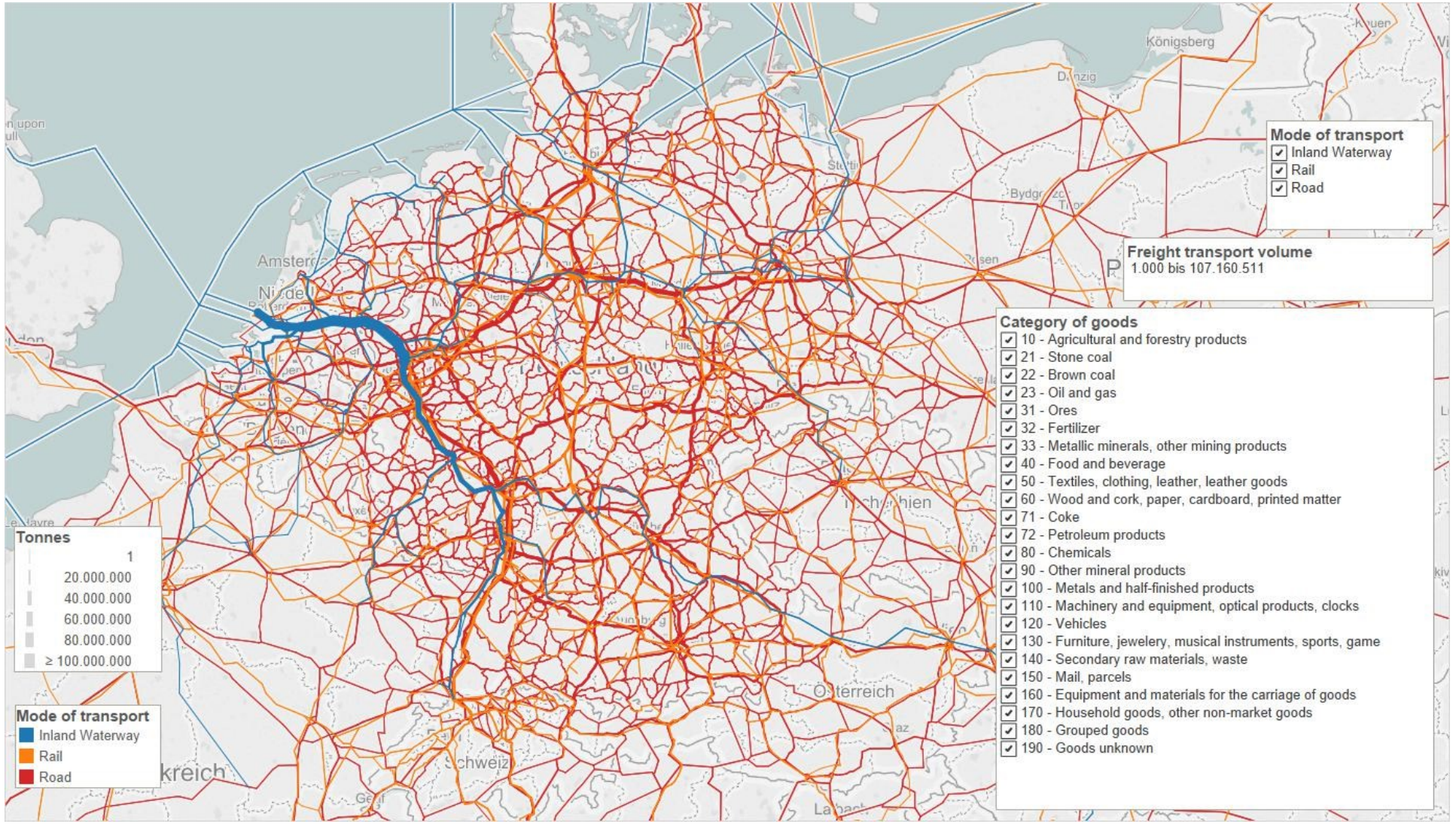
FREIGHT TRANSPORT VOLUME 2010
FILTER = 1 TONNE

BBSR



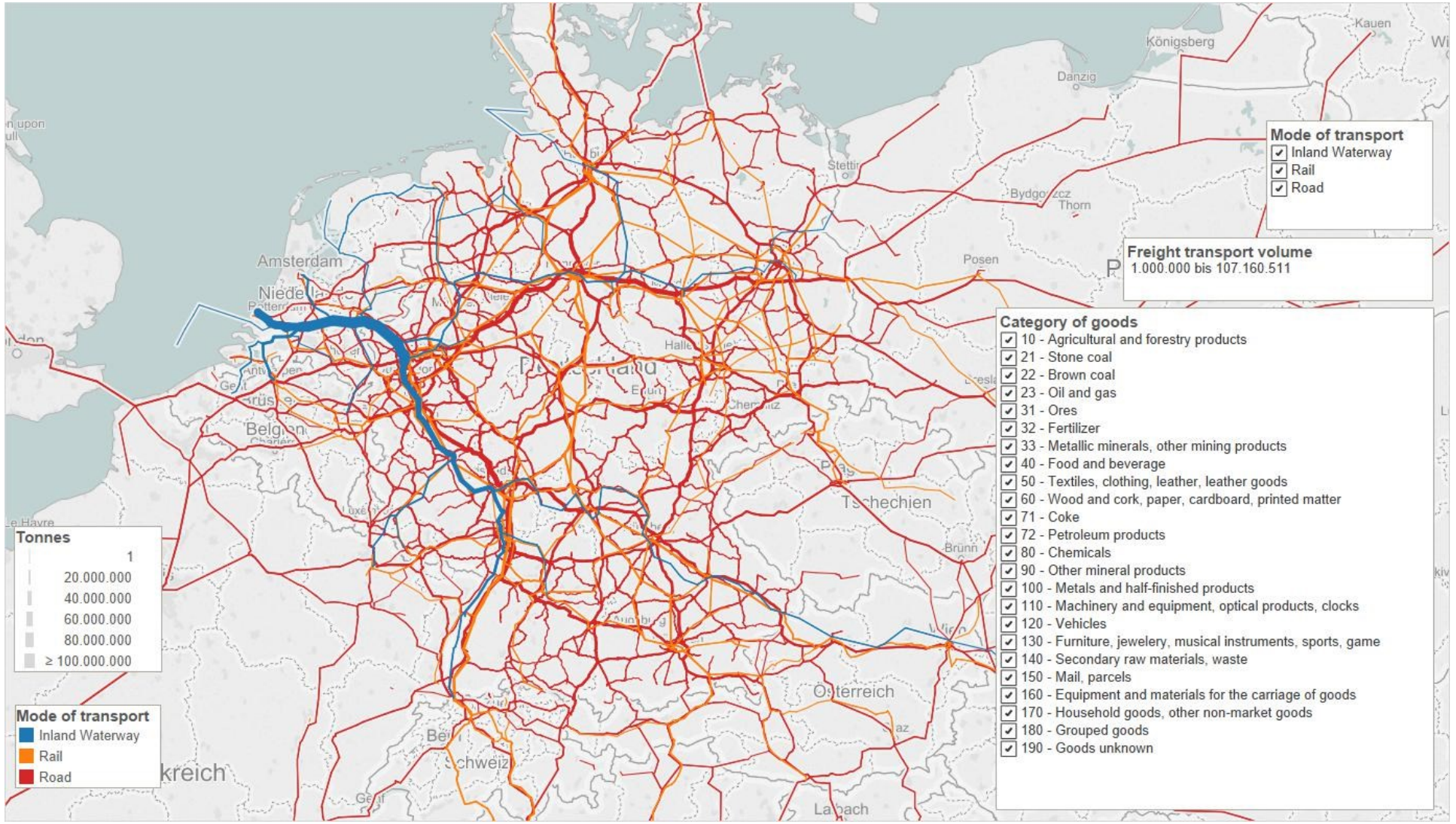
FREIGHT TRANSPORT VOLUME 2010
FILTER = 1.000 TONNES

BBSR



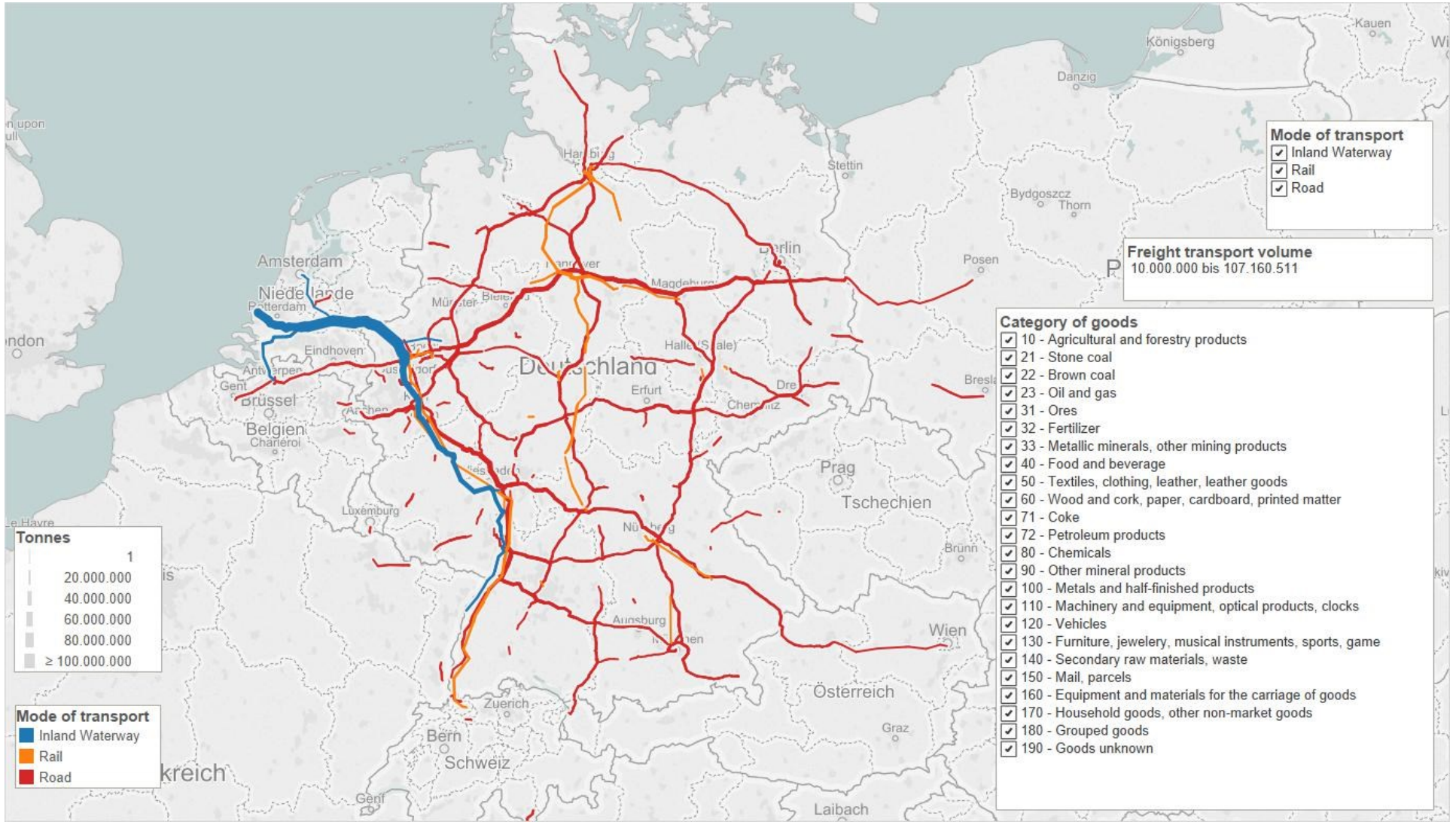
FREIGHT TRANSPORT VOLUME 2010
FILTER = 1.000.000 TONNES

BBSR



FREIGHT TRANSPORT VOLUME 2010
FILTER = 10.000.000 TONNES

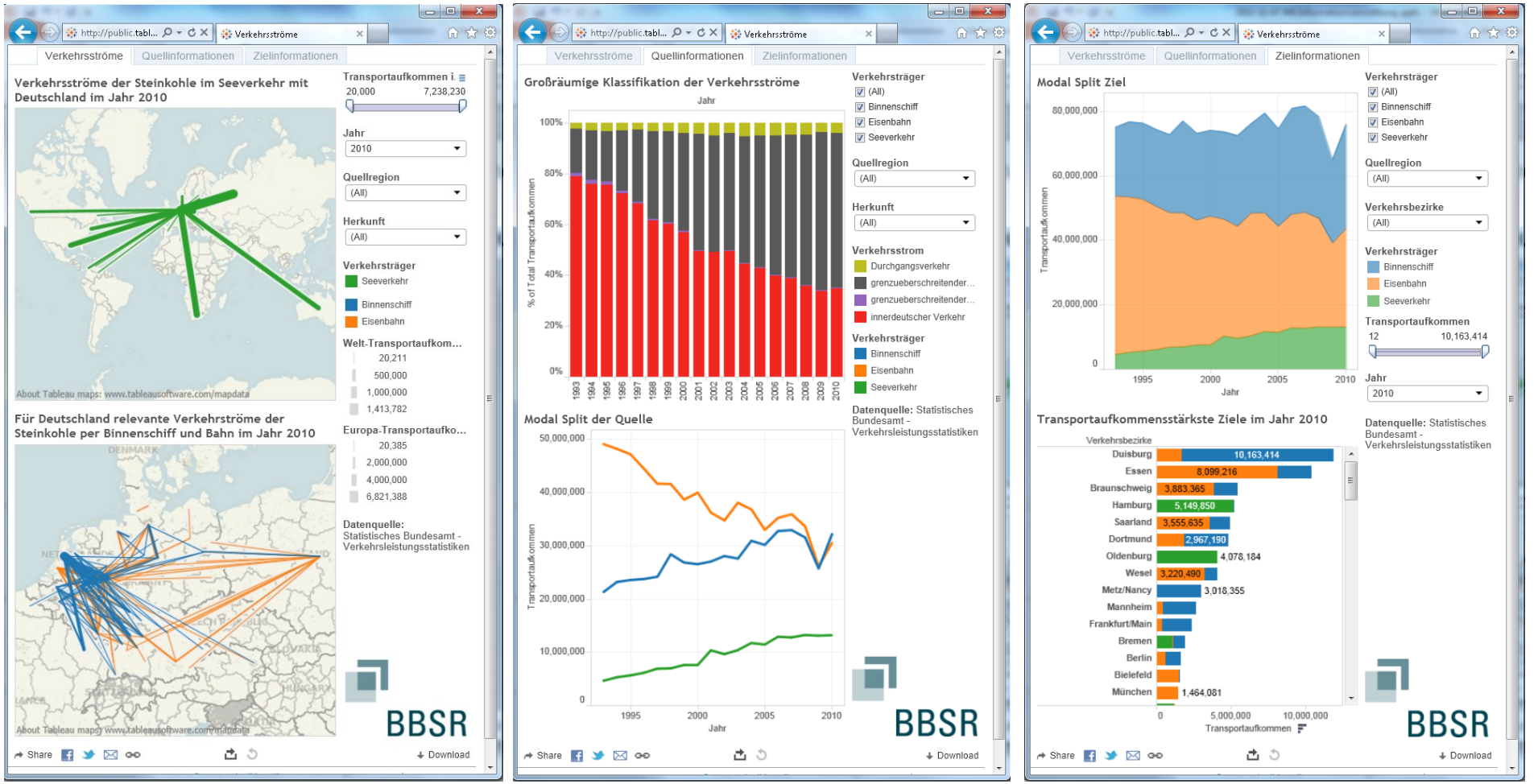
BBSR



FREIGHT TRANSPORT VOLUME 2010
FILTER = 100.000.000 TONNES

BBSR

EXAMPLE BLACK COAL IN GERMANY 1993-2010



https://public.tableau.com/app/profile/bernd.buthe/viz/Steinkohlentransporte/Verkehrsstrme

AND WHAT NOW? - WHAT WILL CHANGE? - WHAT IS THE RELEVANCE FOR THE FUTURE

Image source: atk work/Shutterstock.com

THANK YOU VERY MUCH FOR YOUR ATTENTION!

Image source: phloxii/Shutterstock.com

- **Contact:**

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Landeshauptstadt
München
Mobilitätsreferat

MÜNCHEN
UNTERWEGS

Implementation of Munich's new mobility data strategy: Evaluation of the mobility management programme

ECOMM 2022

Dr. Stefan Synek | Department of Mobility | City of Munich

Turku, 31.05.2022

Munich‘s challenges in terms of growth and mobility

Landeshauptstadt München
Mobilitätsreferat

- 1,47 Mio inhabitants (2019) → 1.85 Mio. inhabitants (2040)
- 612.000 cars (2009) → 740.000 cars (2020)
- German traffic jam capital since 2019

MÜNCHEN UNTERWEGS

Mobility Strategy 2035

Landeshauptstadt München

- „Mobility Strategy 2035“ resolution of Munich‘s city council on 23 June 2021
- Munich wants to be climate-neutral from 2035 and to archieve the mobility transformation
- Improving liveability

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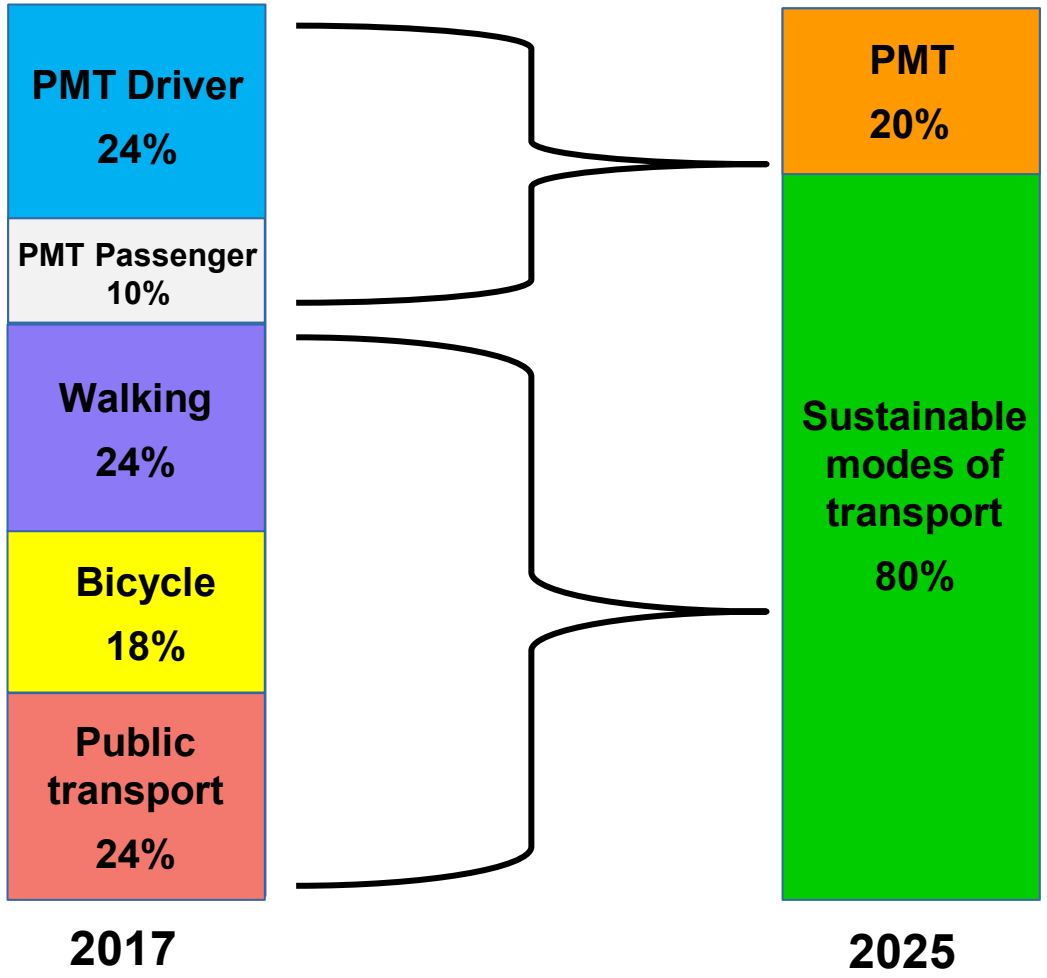
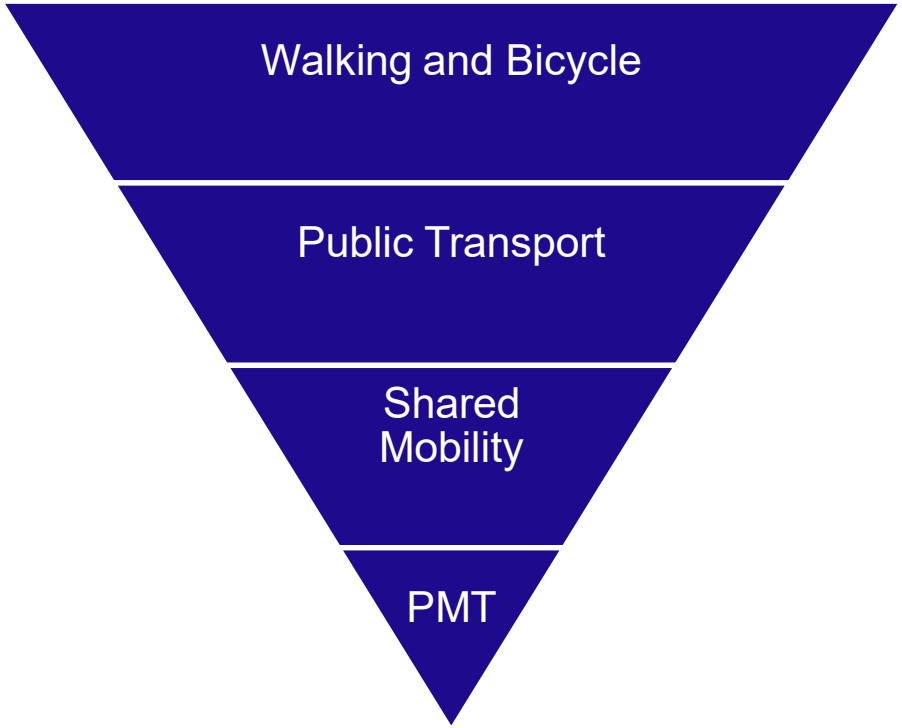
Mobility Strategy 2035

Landeshauptstadt
München
Mobilitätsreferat





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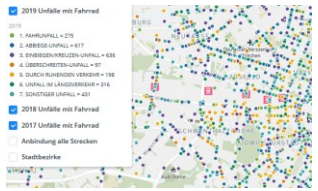
Mobility Data Strategy

Landeshauptstadt
München
Mobilitätsreferat

- Development of a mobility data strategy for a continuous evaluation of the target indicators of the "Mobility Strategy 2035"

Traffic volume	Modal Split	Accessibility	Space distribution	Liveability	Road accidents
Surveys		Sensors, mobile data	Data of mobility service providers		Statistcs, GIS



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Mobility Management in Munich

Landeshauptstadt
München
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- 19 different thematic strategies to reach the goals of Munich's Mobility Strategy 2035

  → **Mobility Management as communication strategy**

- "soft" measures like information, communication, education and organising services to promote sustainable transport by changing travellers' attitudes and behaviour
- Target group-specific motivational communication at appropriate time
- Major turning points and events in life can serve as behavioural change
- Goal of 5% modal shift through mobility management measures

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Life-cycle and event-driven Mobility Management approach

Landeshauptstadt München
Mobilitätsreferat

Life-cycle oriented approach

Mobility event-driven approach

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Mobility Management in Munich

Landeshauptstadt
München
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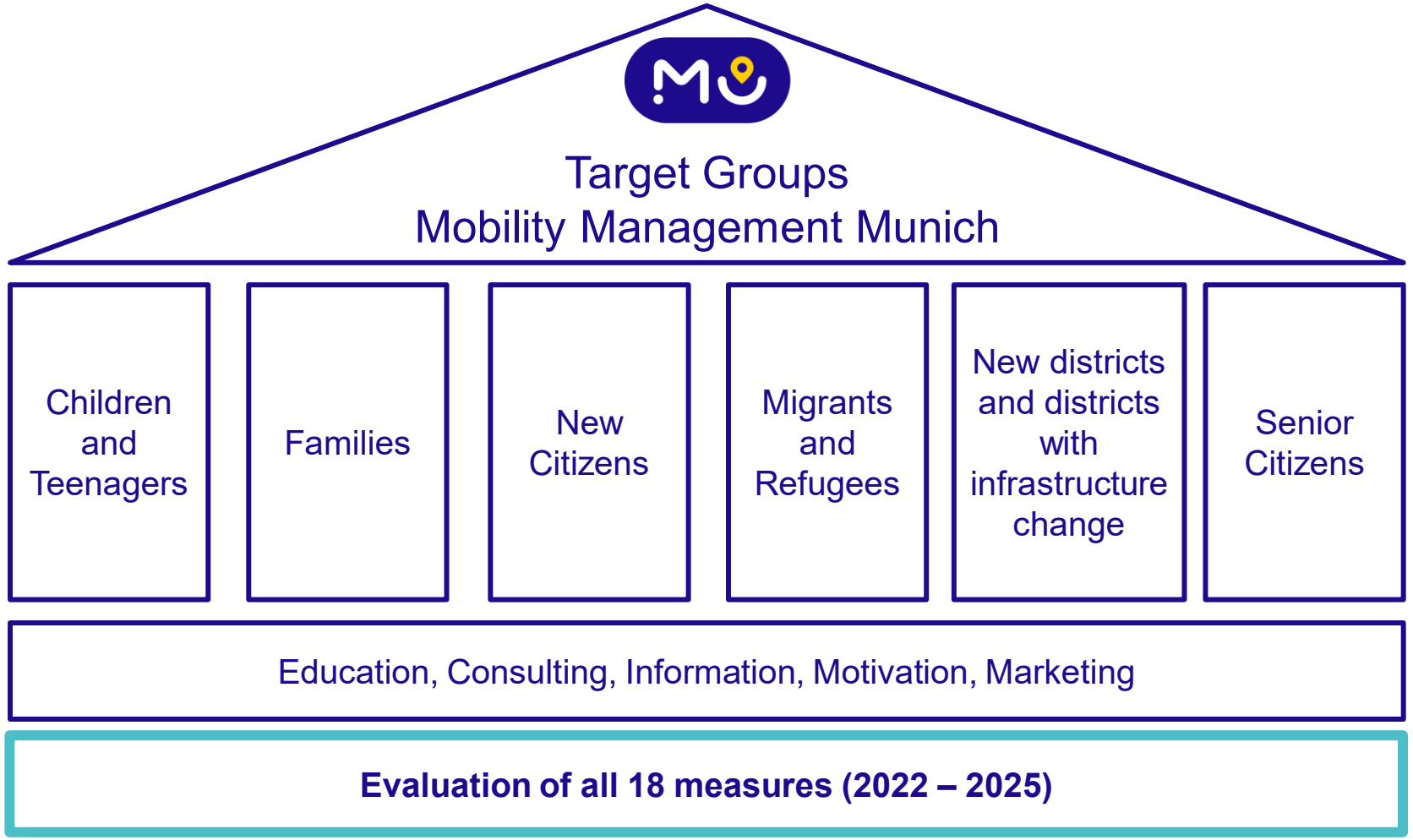

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Mobility Management Measures

Landeshauptstadt München
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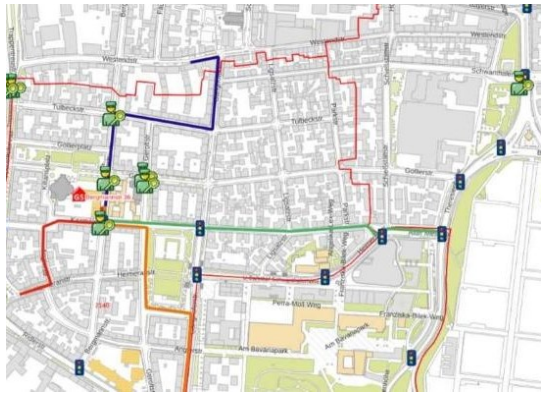
Kindergarten

Exercice programme Bambini

Primary school



Web page for a safe trip to school

Safe trip to school „Bus with feet“

Competition „Fit to school – Fit for the future“

Training for cycling exam

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Mobility Management Measures

Landeshauptstadt München
Mobilitätsreferat

Secundary schools

Mobility theater Let`s Go!

Competition „School cycling“

Workshop „road safety“

Workshop „sustainable mobility“

Families

Trial offer „Go Family!“ Traveling with a baby

Workshop „Cycling with children“

Movement game „kreuz & quer“

Parent letter with mobility information

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Mobility Management Measures

Landeshauptstadt München
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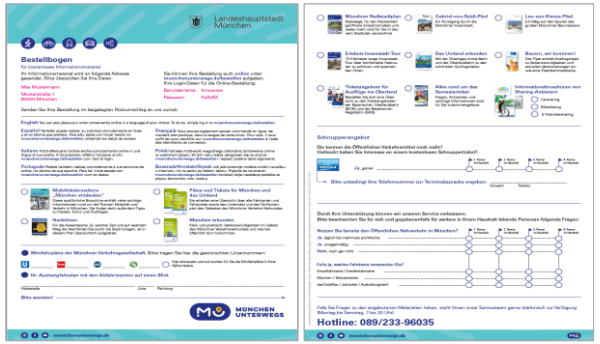
Direct und Dialogue Marketing



New citizens, household movers, residents of new districts and districts with infrastructure change, senior citizens

Cycling tours for new citizens

Competition „City cycling“

Mobility exhibition for children and youths

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Methodological approach of Munich‘s Mobility Management Evaluation

Landeshauptstadt München
Mobilitätsreferat

1. Measure specific evaluation

- Specific evaluation method for each of the 18 measures
- Questionnaire, expert interviews, mobility knowledge quiz, quantitative data and statistics

2. Continuous evaluation

- 10 of 18 measures address children (parents)
  → frequently mailed parent letter as medium with high range
- Parent letter with QR code to survey on mobility management measures → longitudinal study
- Plan to address 70.000 parents (response rate 5-10%)

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Challenging factors of Munich‘s Mobility Management Evaluation

Landeshauptstadt München
Mobilitätsreferat

- Heterogeneity of the 18 measures: target groups (children vs. adults), medium (workshops vs. postal information vs. gamification), content (education vs. trial offers), (…)
- Quantifiability of data
- Goal of 5% modal shift through mobility management measures

  → Causality difficult to prove

  → Focus on evaluating awareness and acceptance of the measures

MÜNCHEN UNTERWEGS

Goals of Munich‘s Mobility Management Evaluation

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Mobilitätsreferat

- How are the particular measures perceived and assesed by the target groups?
- What are appropriate factors for measuring the succes of a measure?
- Which measures are particularly effective and cost-efficient?
- What effects do the particular measures have on mobility behaviour?

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Thank you!

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City of Munich
Department of Mobility
Mobility Management and Marketing

muenchenunterwegs.de